CLINICAL CASE TAKING

CLINICAL CASE-TAKING

GUIDES FOR THE STUDY OF PATIENTS

History Taking and Physical Examination, or Semiology of Disease in the Various Systems

BY

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FOURTH EDITION

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This little book is affectionately dedicated

to

Anna H Williams

My partner in life helpmate par excellence whose genuine constant, stimulating encouragement and abiding interest in my every effort from inception to realization whose absolute loyalty understanding forbearance generous willing personal sacrifices and long hours of love s labors lost must be given full credit for any modicum of success achieved in this effort or in any of my scientific or professional work

PREFACE TO FOURTH EDITION

Clinical Case Taking, a guide for the study of patients in semiology of disease processes, is a treatise on the art and science of securing a meaningful story of the patient's symptom and a systematic examination for the signs of disease. It is a manual for actual ward and bedside practice that is the most valuable source of medical knowledge. An adequate technique for taking a good history and doing a good physical examination is the most useful skill a medical student must acquire to assure success in the present-day practice of scientific clinical medicine.

The important, yet frequently neglected, method of interviewing patients in order to establish what sort of a human being each one is, has been added in the general outline for all types of cases as well as in the section on psychiatry. The significance of personality functions as motivating factors in psychosomatic disorders has been pointed out. Sections on pediatric practice and surgical case study have been added.

The Table of Contents has been so arranged that it may be used as a working outline and may be memorized as a guide when the manual is no longer carried to the bedside. Each section of the contents contains the absolute minimum list of the facts to be commented upon in any type of case, stressing the *points that* should be emphasized in each special history, examination and laboratory study. The introduction is followed by sections on the philosophy of clinical medicine and diagnosis, the plan and scope of the outlines, objectives, teaching value, principles and practice, art, technique and methods *of* recording data. The general history is discussed and an explanation *of each part of the* required record is given.

A master pattern for the introductory clinical study of miscellaneous or obscure *medical* cases is set down in sections I(A) General History Outline and I(B) General Physical Examination are to be mastered as an indispensable part of

the mental armamentarium of every physician Sections follow on essential points in the semiology of diseases that should be emphasized in cases suggesting disorders of various origins and in the different systems The order of sections is the order generally used in the teaching of physical diagnosis and in physical examinations The conditions which primarily affect the body as a whole, the skeleton the habitus the color and texture of the *skin the appendages the mucous membranes*, and the glands are considered preceding those of the systems The disorders in systems in the chest abdomen pelvis and head are covered in order

The conditions presenting changes observed in *general inspection* are considered first Usually the most striking changes in the body as a whole skin head and neck are the result of, and consequently evidence of II endocrine metabolic and hematologic disorders III allergic conditions and IV *nutritional insufficiency This is followed by conditions* in the V lungs, VI heart VII circulation VIII gastro intestinal tract IX genito urinary organs X nervous system XI pediatrics practice and XII surgical practice

The outlines have been divided into certain pedagogical divisions The methods of approach to the problems of clinical medicine are set forth in considerable detail There are many new words and descriptive terms which must be thoroughly comprehended and good proper usage of these should be mastered Effective technique is a skill that is acquired by the dint of persistent application Enthusiastically practiced these methods will yield a rich harvest of medical information Each patient carefully studied will teach the student a great deal Case taking conscientiously carried out according to *the principles laid down should instill the philosophy* and ideals of the current conception of good practice in medicine

I have always felt that proper guidance from the outset in spite of the added burden ultimately yields the best results Scientific methods and systematic mental habits are most easily acquired in the beginning *The clinical clerk* will profit more from a few cases that have been carefully and completely

studied than from a great number that have been briefly and hastily gone through. The conscientious student will be trained to be content only with a logical comprehensive study of his patient and will be critical of the stereotyped incomplete poorly composed carelessly written record. He will learn that there is no foolproof short cuts and that nothing must be sacrificed in streamlining the procedures. Intelligent accuracy and painstaking detailed study are the only royal roads to success in medical diagnosis.

The logical rearrangement of the data is an art and a science. The outlines are devised for the accumulation of adequate information and for the prevention of the error of omission due to incompleteness. The history outline should become an integral part of the future clinician's mental equipment and he must follow it routinely. The historian must recognize the limitations of his sources of information and of his clinical data. Trustworthiness and reliability of data are assured only by trained sense of the careful examiner. Experience alone teaches one how to choose what is relevant and what is irrelevant. The clinician must interpret the symptoms of the patient in the light of pathological physiology with the physical and laboratory signs as evidence of pathological anatomy. Any symptoms may be merely a sensation of subjective nature in the patient but also may be evident objectively as a sign to the examiner.

Many of the sound suggestions of George Dock, M.D., Henry A. Christian, M.D., and William K. Houston, M.D., and of numerous other master clinicians have been embodied in this handbook. Milton R. Hejtmancik, M.D., helped me much in critically going over the galley proof with me. I am indebted to my brother and my children for their contributions to this edition.

GEORGE R. HERRMANN, M.D.

GALVESTON, TEXAS

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CLINICAL CASE-TAKING

INTRODUCTION

The Philosophy of Clinical Medicine

Modern clinical medicine is a science as well as an art The scientific method has been applied in the evolution of the practice of medicine as it has in other fields of natural philosophy Data on the phenomena of disease have been and are still being assembled during life subjected to inductive reasoning and then correlated with the organic changes demonstrated in post mortem studies A great mass of scientific information has in this way been accumulated during the past few decades The analysis of the symptoms and signs elicited in clinical case taking has been further facilitated and augmented in recent years by an array of precise modern physiologic physical and chemical methods of study

The detection and measurement of disturbances in physiologic functions have clarified the mechanism of many symptoms Symptoms lead to the suspecting of the presence of disease and signs to establishing its extent in the case of almost all the organs of the body The functional explanation of the basis of symptoms and physical findings has made simpler clearer and more logical the interpretation of the clinical pictures of disease This interpretation of course has been accomplished in many instances by the application of elaborate apparatus and painstaking investigation

Fortunately when the method of interpretation is once established and accepted it may be used directly in the scientific analysis of case records Semiology or the interpretation of symptoms and signs in terms of pathologic physiology constitutes modern medical diagnosis of somatic

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usual difficulties in his environment and the resulting abnormal reactions may be responsible for unusual or even bizarre symptomatology Heredity sometimes puts serious limitation on the psychic capital the patients may have too little vigor in reserve to meet the stresses and strains of everyday life Some may have had the capacity to tolerate the ordinary assaults of the modern environment but cannot withstand extraordinary shocks

The exploration of the psyche is the field of the psychologist and psychiatrist However hyperreactivity is present in such a great majority of persons in this day that it must be taken into account in every analysis of symptoms This is particularly true when the objective investigation fails to furnish an adequate explanation for the subjective experiences The integration of mind and body in the production of symptoms of discomforts and distress and perhaps eventually of actual cellular changes is now generally accepted

In his early years the physician and particularly the surgeon is interested in and only impressed by the patients with organic disease As he grows older in experience and wiser he begins to see more clearly the great role played by the psyche in the ill health of his clientele His success in the practice of medicine depends in a large measure upon his ability to appreciate stresses and to deal with them in such a way as to relieve his patient He must of course be able to determine with certainty by complete clinical study that every remediable or pathologic process has been properly taken care of and adequately treated He can then confidently reassure the patient and give him an explanation of the basis of his symptoms and the background for his troubles Thus the patient feels justified and no one need lose face

Plan and Scope of Clinical Case Taking

Clinical Case Taking represents an effort to present a comprehensive guide in outline for the assembling of all pertinent information about a patient It consists of a logical arrange

disease The correction of recognized disturbance of function by the action of drugs or by physical procedure is scientific therapeutics

Characteristic patterns of symptoms clinical pictures entities or syndromes have been recognized in the case of most organic disease processes The symptoms are usually definite *and plainly revealed and the signs, as a rule are clear cut and* more or less easily elicited Confirmatory objective evidences are supplied by routine laboratory methods as well as by electrographic special chemical and radiologic methods

Symptoms are, however, frequently atypical sometimes actually bizarre Symptoms may be multiple and unrelated they may be associated with a few signs of doubtful significance or there may even be diagnostic, physical or laboratory findings only Negative results from a complete objective investigation exclude the probability of organic disease and in this case the presence of a psychosomatic disorder in the patient must be considered

There are instances in which evidence of disease can be found but not enough pathology can be demonstrated to account for all of the discomforts complained of The symptoms in these cases are definitely exaggerated The primary diagnosis must then rest for the most part on a very carefully taken personal history This may bring to light evidence of some anxiety some urgent problem that will prove to be the real basis of the patient s symptoms A good history may involve very intimate phases of personal and family life information about these matters is a confidence and this confidence should be honored Patience discretion and tact must be exercised in gathering details as to the patient s native nervous as well as his physical endowments and stamina

The study must usually be extended so as to encompass the whole individual particularly his psyche and his resulting personality Defects in his nervous make up might well be responsible for failure of adjustment to ordinary or to un

velopment Clinical outlines have been written to help the undergraduate but many a young physician must be shown how to gather pertinent clinical data accurately and rapidly He must learn to make his survey with dispatch and to show good judgment in culling the insignificant from the significant observations

Case taking affords the opportunity to obtain firsthand information as to the manifestations of diseases and their clinical courses It is this actual contact with disease at the bedside that fixes clinical facts in the student s mind which reading alone even though extensive can never do We require the best grounded knowledge by eliciting phenomena for ourselves Every case holds the thrill of the unknown, it is a problem to be solved and the inquisitive spirit in us urges us on to investigate until we discover the solution

The history in a number of conditions may be relied upon almost entirely for diagnosis but it should always be supported by a careful physical examination and by laboratory studies In practically all disturbances conclusions drawn from the patient s story are necessary for a complete understanding and treatment of the case Reliable diagnostic evidences of organic disease are revealed in physical and laboratory explorations Any exaggeration of symptoms must of course be recognized and allowance made for any false estimate of the situation by the patient The history is not to be depended upon alone any more than it is to be neglected It must be complete yet concise Intelligent cross examination clear thinking and succinct recording contribute to the adequate and accurate history that is desirable Persistence and practice in history taking will lead to proficiency in the art

Physical examination may uncover the reliable criteria of the presence of pathologic processes as in heart disease Skill in physical diagnosis must be acquired through practice whereby the student becomes familiar with the normal physical findings and learns to recognize the abnormal

ment of clinical terms gleaned from the experience of master clinicians These are set down in what is considered the natural sequence of history and physical examination along with recommendations as to minimal requirements in laboratory studies The student must acquire a clinical vocabulary as one of the first steps in his introduction to clinical medicine He must learn how to use terms properly in his *questions in order* to get the necessary information He must learn not only *what to ask* in the vernacular of the patient, but *how to ask it* and also what to ask about each symptom so as to bring out the differential diagnostic points

The master clinician must know well all of the symptoms and signs and all the differential diagnostic facts about many clinical syndromes He must be able to get all of the relevant facts about such complaints as are presented and must realize which symptoms are most important, which facts are most significant He must recognize whether symptoms are of *organic or psychogenic or mixed origin Extensive training* is necessary to develop an internist who can select only the truths that are significant from the patient s recital of his story or from responses to questions Only a master clinician can extract the salient differential diagnostic points discount fancies and fallacies and collect only facts that are appropriate to his analysis and evidence that makes possible confirmation *and proof of the diagnosis*

Objectives of Case Taking

The ultimate aim of all case taking is to find out what is causing the patient s symptoms in order that the proper steps may be taken to bring about relief The acquisition of diagnostic information from the history physical examination *and laboratory studies is the first step The physician should* strive to impress the patient so favorably that he will exert himself to the utmost to cooperate by giving intelligent responses This requires the development of a quick insight into the psychologic make up of the patient as to personality emotional reactivity sharpness of wit and intellectual de

velopment Clinical outlines have been written to help the undergraduate but many a young physician must be shown how to gather pertinent clinical data accurately and rapidly He must learn to make his survey with dispatch and to show good judgement in culling the insignificant from the significant observations

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Physical examination may uncover the reliable criteria of the presence of pathologic processes as in heart disease Skill in physical diagnosis must be acquired through practice whereby the student becomes familiar with the normal physical findings and learns to recognize the abnormal

A careful correlation of the symptomatology, functional and anatomic alterations, and laboratory findings usually leads to fairly accurate diagnosis. The diagnosis is, after all, merely a summary statement of everything that ails the patient, the character of the disturbed bodily processes or functions. The physician must be able to answer the questions, "How grave are these signs? What is their meaning? Why did they arise? What future dangers do they threaten?"

No foolproof rules can be laid down for the guidance of the beginner or for the relief of the sluggard. No standardized outline can make history taking automatic; none can guarantee success even when religiously followed. However, outlines are of value to the uninitiated in suggesting a clinical vocabulary, in systematizing the procedure, in suggesting and emphasizing points to be inquired into, and in insuring against errors of omission which are likely to be all too frequent. Directions, however, are not to be regarded as hard and fast, so that individuality and originality are suppressed.

Some knowledge of internal medicine and the fundamentals of physical diagnosis are prerequisite to profitable case taking. The beginner should study the clinical case taking outlines in order to be acquainted with the general plan. Thus he will know where to find the suggestions that are needed for the exploration in detail of any complaint or symptom complex. The outlines should be followed in the actual work of case taking until the beginner learns how symptoms group themselves.

Unessential details may be unavoidably included and overemphasized if there is an attempt at completeness. Experience and an increasing knowledge of medicine will remove this tendency. It is always easier to delete unessential information than it is to expand insufficient data.

Histories in general are lamentably inadequate either because the historian does not know about important differential diagnostic points or is too unenthusiastic to inquire into

them The significant details concerning certain common symptoms are set down in the Appendix so that the conscientious student may be helped in his efforts to do a good job of case taking

The scheme of this manual it is hoped will enable the beginner to arrange the facts about the patient in an acceptable fashion It should insure adequacy in detail and the development of the symptomatology and findings in such a way that the facts will be of value in diagnosis

Teaching Value of Case Taking

Much medicine may be learned from patients particularly since a great many people have much native intelligence Painstaking interviews with examinations will yield facts from which a good comprehension of the disturbed physiology may be obtained Careful inquiry will often reveal the important precipitating circumstances and at the same time the primary causative factors the anatomic changes as well as the functional derangements and the natural history of disease

The intelligent and critical history with a carefully done physical examination is a most advantageous and promising approach for students to the study of clinical medicine The medical information gleaned from patients and subsequently interpreted and confirmed in reading is likely to be best assimilated and retained Therein lies the universally accepted superiority of bedside teaching over didactic lecturing

Detailed case taking studies should need no further justification The experience of teachers shows that within reason the greater the demands made on the student in this matter of individual case study the more satisfactory will be the response and the better the resulting work The hope is to inspire the student to be satisfied with nothing short of a complete study of the patient never to be content with stereotyped inadequate fragmentary illogical ungrammatical and careless case records such as are not infrequently encountered in private hospitals Good scientific mental

habits are almost as easily acquired at the beginning of training as are careless ones

The criticism that case *taking demands a detailed and complete* history in every case and represents a standard of perfection which is beyond the student's ability and the time limits of the interne, and finally constitutes an ideal, never to be hoped for in private practice can be given little consideration Thoroughness learned at the onset of ward work will yield much satisfaction later for the great majority of the students of today will be practicing tomorrow in ways established today Students and internes must therefore be required to make detailed, complete case records while in training It takes very little effort later on for them to *learn to eliminate all but the indispensable facts In a heavy* general practice perfect records may be unattainable but the practitioner is usually not so busy in his early years and time spent in recording and filing a full history and a careful examination will again and again pay dividends in time saved and in reputation established The keeping of good records becomes increasingly valuable as time goes on

The proper use of *Clinical Case Taking* should mitigate the *precipitous change from the preclinical* exact laboratory sciences, to the less concrete branches of clinical medicine A satisfactory outline even with a more easily satisfied corps *of instructors will prevent confusion the establishment of bad* habits, and the waste of time and effort These alone are good returns and serve to compensate any loss in individualism It is no doubt true that some students profit by the shift of the responsibility to their own shoulders but it is also true that a good many suffer through lack of precise guidance As the greater proportion of medical students belong to the average the success of the teacher lies with them

Clinical medicine embraces a broad field The few hours allotted it in the medical curriculum barely allow time for more than an indication of the proper methods of approach *to its problems* Method *means* time saving There is so little time and none more precious than the daily hours of

bedside instruction These fleeting hours are so frequently partially wasted that any means to prevent dissipation of time fully justifies its existence

Without the aid of a guide the medical student entering upon his clinical work the interne or the practitioner in his earlier years is by no means sufficiently equipped with a knowledge of general medicine to be able to analyze offhand every one of the multitude of symptoms of which a patient may complain The points of differential diagnostic value to be determined concerning each symptom especially for the *more uncommon* symptoms are often somewhat vague even in the minds of some experienced physicians and doubly so to the student historian Therefore a readily available *outline* of material built up from the *experience of many* clinicians should be a welcome aid

I am firmly convinced of the great teaching value of carefully supervised ward and laboratory work The student in his clinical clerkship acts as the family physician In this capacity he takes the history of the patient makes the complete physical examination and laboratory studies and follows the therapeutic procedures recording minutely in the progress notes the *observed* effects and the end results In order to make complete his case record he also should make surgical notes *on patients who have been subjected to* operations as well as autopsy notes on patients who have died *He* is always expected to attend in person all special procedures done on his patient

Principles and Practice of Case Taking

The patient presents himself or is brought to the physician for the relief of some acute distress or disabling condition some discomfort or feeling *of illness* *The* first line of information desired relates to just what he feels or has felt of an unpleasant *nature* The patient usually wants to tell of his troubles and he should be encouraged to do so and reassured by allowing him to proceed in his own way with simple words A record of the disagreeable subjective symp

toms of the patient makes up the clinical history. A shrewd clinician recognizes the paramount value of close attention to the details of the story. A good clinical historian will make an occasional relevant illuminating comment on facts which the patient has not particularly stressed and which might have gone undeveloped if the interviewer had not been on the alert.

The importance of eliciting symptomatology warrants careful listening and occasional well put questions that lead the patient on and help in the assembling of significant chronologic data. A rational interpretation of the facts given may thus be assured. A few pertinent remarks should be made to convince the patient of the physician's genuine desire for information in order that he may be of help. This will influence the patient to reveal facts that timidity might cause him to suppress. Further questioning will bring out the second line of historical facts concerning personal habits, marital relations, past experiences, illnesses and family history.

The alert physician will glean many significant suggestions from the very manner in which the patient tells his story; he will note what is emphasized, what is treated lightly, what is seemingly taken for granted, what is avoided, what is described clearly and concisely, what is vague and confused and whether the patient is straightforward or is apparently trying to conceal something. It is quite important to recognize *what the patient fails to touch upon*. Tactful and yet thorough cross examinations must be carried out in most cases, since psychoneurotic complications so often develop.

A show of haste or of a cold business like attitude with a barrage of rapidly fired questions and poised pencil will antagonize most patients and yield disappointingly inadequate information. A noncooperative attitude may also be created by abruptly beginning with questions as to full name, age, sex, occupation, marital state, relatives, addresses, and other administrative data. It is usually advisable to attempt to obtain the administrative facts only from the hospital

office records or after one has become well acquainted with the patient, and preferably after the whole story of his illness has been obtained

The patient naturally desires to tell about his own presenting symptoms and associated troubles first It is to be remembered that it is not necessary to get all information at the first sitting The entire background cannot always be obtained at the initial meeting It may be advantageous not to appear to record notes in the preliminary or primary interview A person to person talk should be sought at some time for the discussion of personal habits and moral attitudes and venereal disease Members of the patient s family may supply important information and must at times be depended upon for most of the history Friends or acquaintances or those who brought the patient to the hospital are sometimes the only ones who can supply the data necessary for the solution of the clinical problem A visit to the home of the patient and a survey of the environment will help in the solution of most problems but is too rarely practiced

A knowledge of the commonly used lay medical terms is necessary in the interpretation of the patient s story and in formulating questions one should attempt simply to have a chat with him Tactfully refuse to accept or record vague meaningless or ambiguous terms or diagnoses in the history as complaints Such words as nervous or gas or indigestion have many meanings in a patient s mind

You should not accept the diagnosis of other physicians as parts of the history All hearsay diagnoses should be checked

A good clinical story carefully developed and analyzed leads directly to the correct diagnosis in fully half the patients studied The few necessary specific methods of examination are often suggested as a short cut for the further establishment of the diagnosis The patient is then spared prolonged discomfort and anxiety and the expense of unnecessary and costly laboratory studies The mercenary practice of some busy physicians consists of sending the patient into the hospital with a blanket order often to the

toms of the patient makes up the clinical history A shrewd clinician recognizes the paramount value of close attention to the details of the story A good clinical historian will make an occasional relevant illuminating comment on facts which the patient has not particularly stressed and which might have gone undeveloped if the interviewer had not been on the alert

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patience temperament and mind may be warped by pain and the ravages of disease Strive to gain and hold his confidences and win his cooperation Even when exasperated hold your own temper at all times Rough sharp or cutting remarks brusqueness and arrogance are never justifiable

History taking may develop into a battle of wits but there should be no sparring or countering for position It should be entered into with all senses on the alert and the physician should assume and maintain tactfully but firmly, full control of the interview A barrage of questions abrupt queries as to what when where, and how may antagonize the patient and get him into a mood of uncooperativeness

Reminiscences concerning mutual friends may make the patient feel better acquainted and under less tension Attentive listening with a genuine endeavor at understanding and without criticism judgment or admonition is most often successful Each patient presents individual problems No two can be approached in exactly the same way Nothing resembling perfunctoriness should creep in Flexibility of approach is most successful The personality of the patient determines the course of procedure and the questions to be put Ingenuity will be highly rewarded

A truly sick patient has usually worried a great deal and has built up in his own mind an exaggerated picture of one phase or another of his trouble The patient s impression is thus warped and his story may unintentionally mislead Again he may be too obliging about giving information or he may be biased by his experiences with other physicians and in such a person leading questions certainly must at the beginning be avoided Information volunteered must be accepted but not on face value It must be carefully assayed and its content of precious metal separated from the dross

Most patients are poor actors and are not very clever at concealing their motives particularly when these are quite creditable Patients may make up singular symptom complexes and occasionally one denies altogether symptoms

interne or resident to make a complete study and spare nothing. This usually results in totally inadequate interne's admission note as a history and orders for every conceivable laboratory procedure done by technicians without a complete history and physical examination by the physician. Such practice should be openly and roundly condemned.

Art of Case Taking

The skill of case taking is a most valuable asset of clinical medicine and is within reach alike of the clinical clerk, the externe, the interne, the resident, the general practitioner and the specialist.

The student and physician should follow the precepts and learn from the experience of others who have gone before him. He must translate the medical terms into laymen's language and vice versa. He must be able to understand his patient's words and make clear what information he desires.

He should greet the patient earnestly and with a modest restrained air of hopefulness; he should introduce himself modestly as a friend anxious to be of service to the patient. The exhibition of good manners, sincerity, courtesy, modesty, tactfulness is particularly important at the outset of history taking.

It is important to appear to have plenty of time to sit down and go over matters leisurely and unconventionally. A silence due to strangeness and unfamiliarity may be broken by a brief chat about matters of mutual interest, but digressions must be short. It must be remembered that the patient literally hangs on every word of his physician. There should be no suggestion of preconceived ideas as to the nature of his trouble. The historian must be most careful of any remarks that he may make. Weigh carefully each word. Try to banish embarrassment and allay anxiety and fear by actions rather than by words. Words should ring true.

Reassure, be kind, sympathetic, patient and tolerant, remembering that the patient is a sick human being whose

over sensitive individual who exaggerates symptoms an in sensitive one who minimizes his troubles one that has not made careful observations or one who is quite vague about his complaints The one question as to the duration of the illness may direct the patient s attention in such a way as to make it possible to find out just what is troubling him and what symptoms caused him to consult a physician

Ask the patient to tell about his troubles from their onset If he seems to hesitate and appears not to know where to begin or what to say it is a good plan tactfully and disarmingly to induce him to state how long he has been ill and what brought him to seek medical attention Try to get him to tell what unpleasant sensations or feelings he has *experienced* what discomforts he has suffered and perhaps how long he has been disabled and to what extent and where and when he was confined to bed

Listen attentively as he *talks* Interject an occasional short comment or a relevant *question* To show a sympathetic interest in the patient s trouble in all of its aspects is usually well rewarded The physician learns to form a surmise as to the sort of impression that the patient is attempting to make he learns to estimate whether or *not he is* withholding important information whether he is more mentally than physically ill

It becomes necessary sooner or later to direct the patient s storytelling by pertinent questions which are so put that they *do not offend him* and are so worded that he fully understands what information is wanted. Outlines such as those in *Clinical Case Taking* are a systematic arrangement of the common symptoms arising from disorder in various organs These are to be followed only to obviate omissions and facilitate picking up manifestations of some common disease process and so getting a clue which can be developed by further inquiry No outline can be absolutely complete and contain every significant point concerning every disease process in every organ

that he really *suffers from in order to test out the physician* or in an attempt to check the diagnosis of the previous physician The strangeness or even absurdity of the story often excites suspicion Usually such patients when confronted with the suspicion admit they have resorted to masquerading *On the other hand, the frank psychopathic* patient may be able to cover his true state quite well and resist the effort to break him down

The data necessary for getting the psychologic background of a patient's trouble will usually not be volunteered Personal experiences and reactions may be drawn from the patient with due care In this connection it is not only permissible, but desirable to employ carefully chosen leading questions as to the patient's version of the attitude of the parents, of his economic status, of his pleasures in adolescence and childhood of social contacts outside interests hopes, ambitions and realizations Inquiries covering these points may uncover important psychic factors In such individuals history taking may be particularly difficult and sometimes impossible, particularly if the patient is mentally disturbed and refractory Care should be taken to avoid irritating *the* patient or arousing *his distrust Complete* examinations must be done and carefully done in order to assure such persons that there has been no stone left unturned and that there is no possibility of organic disease having been overlooked

Technique of History Taking

The clinical history or anamnesis should tell the story of a patient's illness and its background It must not be *merely a record of answers to a memorized list of questions* that have been put to the patient *Clinical Case Taking may be taken to the bedside by the student primarily as a guide* and as a source book for suggestions

In the introductory conversation it may be easily discerned by the practical psychologist whether he is dealing with an

The completeness of this elaboration may be taken as an index of the extent and accuracy of the historian's medical knowledge

The Physical Examination of a Patient

The alert physician also makes certain important observations as he examines the patient Interviewing and the use of the seeing eye were the only methods available to the early disciples of Hippocrates **Inspection** should still be the initial procedure in an orderly and systematic survey of the patient as a whole The visible changes produced by disease are often conspicuous

The laying on of the hands was used by the ancient practitioners of the healing art perhaps more as ritual during incantations for the relief of pain This **palpation** remains the second method of physical examination and often yields important diagnostic data

The more revealing methods of clinical diagnosis were discovered relatively recently **Percussion** for outlining pathologic processes by virtue of changes in resonance was introduced in the eighteenth century 1761 by Auenbrugger It was not widely used until after 1808 when Corvisart republished the *Inventum Novum*

Auscultation for detecting abnormal sounds that result from anatomic abnormalities was established a few years later by Laennec in 1816 and reported in 1818 and 1819

To master these arts requires practice practice and more practice Symptoms and signs should be clearly differentiated—not mixed together *Symptoms* are subjective manifestations and *signs* are objective findings

It is inadvisable to take down every word exactly as the patient gives it *An occasional note jotted down in abbreviated telegraphic form for later reconstruction has proved to be satisfactory*

It is a good plan to leave good free margins and interlinear spaces in the rough draft of a history, so that you may insert facts, later recalled

Give the patient time to think things over Abstain from the highpressure method Avoid questions that can be answered by a single word as well as leading questions except in the personal history Indirect or roundabout interrogation will often yield information when direct questioning *may fail This is especially true in histories of venereal* disease and insanity which the patient may attempt to conceal under cryptic terms such as "strain" and "nervous breakdown" *Embarrassing questions should not be asked in the presence of witnesses*

Questions are often misunderstood and bear repeating in changed form and in other connections Insist firmly but pleasantly on definite answers and specific statements as to symptoms and their development A detailed description of symptoms is to be desired along with the time of their development and the relation in order of each symptom with others

The patient's memory of symptoms must often be refreshed by appropriate questions so that forgotten symptoms *of the present illness* will be brought to mind The facts brought out must be so arranged as to keep the story in chronologic sequence

The system review of symptoms is often carried on during the general physical survey This should be a record of symptoms and should not contain signs reported physical *findings, or diagnoses* It is the inventory of symptoms

Facts important in differential diagnosis even negative points when relevant, should be incorporated and developed

THE CASE RECORD FORM

The Front Page

The front page of the case record is to be filled out and recorded completely (not using initials) even to the given and maiden name of women

The name of the patient should be learned and associated with his physiognomy and his trouble It is good psychology to address and discuss the patient by name rather than as a case of this or that

The **address** gives information as to the environment in which the patient lives and may suggest exposure to a certain type of disease Recent or remote travel foreign duty or service in the tropics would emphasize the necessity of considering alien diseases

The **age** of the patient brings up for consideration the certain diseases that are peculiar to his age level One can eliminate many diseases and concentrate on those that are most likely to occur

The **sex** factor is of importance in certain diseases In those diseases that occur in either sex some are more prevalent in males and some in females This is a part of the general store of information that the physician must have and be able to use critically and discriminately in his diagnostic analysis

Racial Stock Color birthplace nationality religion social status and occupation may supply clues to obscure disease processes Other suggestions of importance may be gained from these data

The name address and telephone number of the nearest relative or a friend are required for emergency reference

The date of admission hospital number service ward and bed numbers historian s name and former admission and discharge dates numbers and diagnoses are data necessary for the record

The Writing Up of the Case Record

The final composition of the case record is not done at the bedside Assembling of the data and the writing or dictating of the record should be done when the historian has a bit of leisure time and can sit down and think over the evidence that he has accumulated and the impressions that he has gotten

Deliberation is essential in the writing up of the history Time devoted to reading over pencil notes carefully and to eliminating every unessential word will clarify the history Think over the evidence that has been accumulated and the impressions that have been gleaned before attempting the transcription of the story This will insure a clearer and more comprehensive narrative and will emphasize the salient features of the case

Repetition of information in various sections of the history is to be carefully avoided Material concerning the present illness should not appear in the system review Undue haste in the construction of the history making the text seem like notes dashed off in a minute is a great mistake

Data obtained as described reconstructed and rewritten in ink in good English, with words correctly spelled grammatically arranged and properly punctuated and the results of a routine laboratory examination recorded will form an acceptable case record

Record the patient s name upon each page of the history and number the pages in sequence

The course of the illness from day to day should be carefully indicated in detailed progress notes

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Administration Data Necessary for the Front Page

It is customary to place at the head of a history data necessary for identification, orientation, recording, and filing of the case The completion of the form will insure to the responsible physician or hospital administration, information necessary for facilitating communication with the relatives or friends of the patient, should it become necessary to do so

Record the following information on each patient preferably from the admission records of the hospital or after the history has been taken

NAME
Surname Christian Name
ADDRESS
No Street City State
AGE SEX COLOR RACIAL STOCK NATIONALITY
BIRTHPLACE RELIGION
SOCIAL STATUS S M D W OCCUPATION
NEAREST RELATIVE OR FRIEND
Name Address Telephone number
PATIENT S FAMILY OR REFERRING PHYSICIAN
Name *Address*
DATE OF ADMISSION DATE OF DISCHARGE RESULT
HOSPITAL NUMBER Ward Bed Service
HISTORIAN S NAME
DATES OF FORMER ADMISSIONS AND DISCHARGES
HISTORY NUMBERS
FORMER DIAGNOSIS
INTERIM HISTORY
DIAGNOSIS—Etiologic Anatomic Physiologic Functional (tentative final)
Add code numbers from a Standard Nomenclature A M A

GENERAL HISTORY OUTLINE

A master outline would be very desirable but it obviously could not be absolutely complete and herein lies the danger in all outlines A certain order preferably a chronologic one would seem to be ideal but this is impractical Most patients are unprepared and unwilling to tell first the medical story of their antecedents and siblings and their experiences from the time of birth to the time of their presentation to the physician Most patients want to talk about the sufferings that are disturbing them at the moment to unload the burden of fears and worries

Such considerations have led to the acceptance of a reversal of the direct chronologic order in the usual divisions of the history and in each individual part

Chief Complaint (C C) and Present Illness (P I) In the recording of the present illness it is usually desirable to go back to the time immediately preceding the onset of trouble

The Personal History (Per H) section containing information as to *occupation habits marital history* social and intellectual development and mental makeup should reveal the reaction of the individual as a whole to his environment

Review of Systems (R of S) by Common *Symptom* groups is a rough screening for associated *symptoms*

The Past History (P H) is a source of etiological factors The Family History (F H) indicates familiar and hereditary tendencies

Physical Examination of the patient from head to foot is recorded in order with data from routine tests

Laboratory Studies complete the primary clinical record

Some Details Concerning Each Division of the Case Record

I The Chief Complaint (C C) should be a brief concise statement of the primary disturbance for which the patient is

seeking relief a clear **complaint,** a phrase set down in the patient's own words *if these be rational and descriptive* A short series of predominating symptoms often indicate to some extent the nature and sometimes the location of disease Such expressions as "shortness of breath," "pain in the belly," "loose bowels" burning on passing urine," etc, may be used in recording the chief complaint Multiple complaints suggest the presence of a psychogenic disorder The patient's own diagnosis or that of a previous physician and all vague, meaningless terms as "gastritis" 'gallstones,' dysentery kidney trouble torpid liver nervousness should never be accepted and recorded as complaints

II The PRESENT ILLNESS (P I) is the *most important* part of the history to the patient and also to the physician It comes into its first place quite naturally As the patient presents his version of his trouble his story is tactfully redirected He is encouraged to tell of his troubles from the exact **date** of onset as nearly as he can stating what he considers to have been the **possible precipitating factor or the probable cause,** surrounding circumstances, and the manner of onset He should be guided in developing fully the differential characteristics of the primary symptom and subsequent symptoms appearing in the course of illness

The date of appearance of each symptom its location character, as to severity duration radiation constancy or intermittency periodic intensification association with other **symptoms** and **complications,** should be established Some diagnostic details about each of the common symptoms will be found in the Appendix Increasing severity of the disease or improvement under specific treatment should be recorded If symptoms suddenly recur and go away suddenly it may be enough to describe one typical paroxysm attack or episode along with the frequency of recurrences and any change in their character

The Review of Systems commoner symptoms as outlined usually occur in disorders of the system which is primarily

affected However the behavior in closely related systems should be inquired into and the abnormalities recorded if present and sometimes even if absent since absence may be significant The inventory of symptoms of the system involved primarily may be gone through at this time to prevent omissions of important facts

The patient s story and his answers to stereotyped questions will often fail to give a true clinical picture of a recognizable disease A knowledge of pathophysiologic syndromes and proficiency in the application of history taking is requisite to success in developing adequate diagnostic records The patient s story must be directed by relevant remarks and inquiries the symptoms must be interpreted evaluated the details of the story amplified in the hope of getting as nearly correct and as clear-cut a symptom complex as possible

Carelessness ignorance malingering and misrepresentation may result in a worse than useless record and if in doubt as to the veracity of the facts the objective physical and laboratory data should be depended upon A final opportunity should be offered to correct any misstatements and add any facts that may have been missed or not recalled until late

The degree of true disability that has been sustained whether genuine or feigned the date and reason that work was given up and that the patient took to bed should be ascertained any *modification* of the patient s illness by treatment or spontaneously should be investigated and set down in detail Derogatory allusions to diagnosis or treatment of former physicians should be deleted

The concise logical and chronologic story of the present illness should yield a clinical picture that would be recognizable as a clinical entity by any physician Any information that helps in the delineation of a clinical picture may be incorporated in the P I to advantage

III The Personal History (Per H) has been granted the status of a very important part of the anamnesis because

of the nerve wracking effects of *complex modern life upon so* many persons Environment may contribute much

The **occupation** may expose the worker to various occupational diseases, but commonly mental strain does more harm than the physical and toxic factors Long hours lead to exhaustion and fatigue, while worry and the loss of sleep create a vicious circle Length of military service the theatre of war in which he served and the exposure there to endemic disease may be of great significance

The degree of **exposure** to the elements, dampness extreme cold or heat, silica dust, to various poisons rank in significance with the nervous strain of working conditions with questions of responsibility of wages of efficiency of am*bitions, and of a man's ability to adjust himself satisfactorily*

The frequency of change in work the length of time spent on different jobs and the reasons given for making a change may give a clue to the inherited or acquired inability to stand up under the stress and strain of life

Metal *poisons* such as lead zinc brass, copper mercury arsenic phosphorus and antimony chromic acid aniline nitrobenzene, tar resins or chemical fumes or gases produce *serious tissue damage Silicate and other dust may give rise* to silicosis and fibrosis of the lungs Substances ingested with foods allergins may produce disease *Overeating* is an injurious habit

Bad **habits**, too reflect emotional break down with injurious effects of faulty living, under compulsion or of choice The resort to drugs and intoxicants is an attempt to escape reality *Drugs* used to excess continuously or intermittently produce toxic effects *Alcoholism* may produce delirium tremens hallucinatory episodes suspicious or a jealous state of mind peripheral neuritis pellagra or other forms of avitaminosis *Narcotics or other sedatives are habit forming* and lead to deterioration of the will power *Tobacco* in susceptible possibly allergic persons results in vascular damage which affects coronary cerebral, *and peripheral arteries*

The *Marital History* calls for a record of the status dura tion age general health or specific disease conditions in the mate compatibility separation by divorce or death The number of children their ages and health type of labors number of stillbirths miscarriages or spontaneous or induced abortions puerperal infections sterility and the menstrual history may have a bearing on a woman s condition Financial stress contraceptive practices coitus interruptus chemicals used may be of significance

Stories of unusual sexual life precocious interest early puberty moderate or excessive desires irregularities abnormal practices masturbations assaults or seductions prostitution are evidences of psychiatric disorders Extreme reactions to experiences disappointments affairs enforced bachelorhood or a spinster life may be sources of emotional *stress*

The *Personal History* should reveal the individual as a whole his personality his mental makeup Try to estimate whether as a person the patient is overstimulated depressed fluctuating slut in suspicious psychoneurotic psychasthenic or hysterical whether he is a victim of anxiety neuroses or impulsive obsessions or compulsions His social and economic background his education training and attainments furnish a basis for estimating personality However religious fanaticism or indifference delinquencies waywardness fighting tantrums spasms and meanness or cruelty may possibly indicate atavisms or hereditary weak spots in the warp and the woof of the nervous tissues Such a mind is usually greatly concerned with ill health there is an inborn tendency to abnormal emotional reactions to the difficult situations that develop in ordinary life These abnormal reactions grow more intense with repetition of insults and the patients crack up under environmental traumas Some such an explanation of the patient s failure to adjust himself is necessary for a complete diagnosis and for adequate treatment

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V The Past History (P H) is a chronologic record of previous illness preferably in reverse order, especially when the present illness is discussed first The more recent past illnesses are more likely to have significant bearing on the trouble for which the patient is seeking relief When there is a very close relationship this past episode is usually considered as a part of the present illness and the factors merely mentioned in the past history with a reference to the present illness section of the history The historian must not accept a patient s diagnosis of a past illness at face value but must quiz the patient concerning the symptoms *and* signs that were *recognized* at the time of the illness He should get enough data to satisfy himself that the patient s family physician s diagnosis was reasonable This requires tact skill and a knowledge of the common clinical pictures

There are *certain* diseases that are known to be commonly accompanied by serious complications and very commonly followed by chronic disease processes *Often* severe **pneumonia** may be *followed* by bacterial endocarditis or lung abscess or empyema *or* purulent arthritis genuine **influenza** by *bronchiectasis* primary **pleurisy** by pulmonary **tuberculosis** **Typhoid** fever may have contributed to the formation of gall stones and **typhus fever** to vascular disease **Gonorrhea** may result in strictures and genitourinary complications but *also* in septicemia purulent arthritis and endocarditis **Syphilis** is the common cause of late nervous system or aortic *involvement* **Rheumatic fever,** chorea migratory arthritis with subcutaneous nodules growing pains attacks of pharyngitis or tonsillitis in youth all too frequently produces insidious or *fulminating* carditis and subsequent chronic cardiac valvular disease **Streptococcic** or septic sore **throat** or **scarlet fever** may be followed by acute rheumatic fever or acute glomerular nephritis which may become chronic

Tuberculosis may heal and later flare up as miliary meningitis **Diphtheria** may be the etiologic factor in some

IV The REVIEW OF SYSTEMS BY SYMPTOMS (R OF S S) is introduced as a check, or coarse mesh clinical screening, to prevent the common errors of omission in history taking Inquiry is directed to the occurrence of certain standard groups of system symptoms in the present or recent past Getting these data not only serves to recall temporarily forgotten troubles and associated system involvement, but also insures some degree of completeness of the case record and serves as a bridge leading from the present illness to past illnesses The symptoms in the system which are chiefly involved *in each patient are to be fully developed in the present illness* Symptoms in commonly associated systems if present, should be incorporated in the present illness (P I) Significant negative symptoms might also well be mentioned to give some degree of completeness to the clinical picture

The systems are reviewed in anatomic order beginning with the head asking as to the presence of the characteristic symptoms of disease in the eyes ears nose mouth throat and neck Then we proceed with questions that would bring out information about disease in the chest in the respiratory and the circulatory systems Next we come to the abdomen, inquiring as to symptoms of gastrointestinal or hepatic origin Symptoms suggestive of disorders in the urinary or genital tracts are reviewed with the patient and evidence of disturbances in the nervous system in neuromuscular coordination in the extremities and finally in mental balance and capacity are solicited

The *general health* status should then be considered Is the patient delicate or robust? What of growth and development what of the body weight and strength? Are they increasing or decreasing are they normal or abnormal?

Injuries or **operations** should be recorded as to dates nature seriousness complication and ultimate results The patient should be asked if he has ever been rejected for life insurance or for service with any branch of the Armed Forces and if so by what organization and for what reasons

conditions such as cancer tuberculosis diabetes mellitus goiter, arthritis gout obesity premature arteriosclerosis sudden death apoplexy high blood pressure, kidney dis ease Bright's nephritis congenital hemolytic icterus or jaundice anemia hemophilia leucemia gastrointestinal troubles ulcer allergies hay fever asthma eczema urti caria migraine angioneurotic edema queerness mental and nervous disorders muscular atrophies epilepsy or insanity

VII The PHYSICAL EXAMINATION (P F) or status praesens (S P) should be a concise yet complete record of the signs revealed in a careful study of the patient by the methods of physical dia nosis These methods employ all the senses at times taste rarely Smell may give valuable information if employed attentively along with discerning vision during inspection The use of the sense of touch as applied to the body is palpation Feeling and hearing are combined in percussion and auscultation These four single essential basic procedures of examination are *fundamental* and must be practiced regularly and assiduously to develop the skill that is prerequisite to success in diagnosis Many special instruments and laboratory procedures have been de veloped to improve upon our perception but these cannot displace the routine physical study with the unaided senses

The physical examination is best prosecuted in a regular sequence from the top of the head down the neck to the chest and abdomen and finally to the extremities Remarks are to be recorded on status general condition habitus facies constitution nutrition skin and appendages head skull eyes ears nose mouth throat neck thorax lungs heart peripheral vascular system abdomen anus and rectum gen italia back and extremities, lymphatic glands and nervous reflexes In emergency situations or when pressed for time the system that is predominantly involved may be given at tention first and the rest of the examination completed later

cases of heart block Severe **measles** (rubeola [morbilli form]) and **Whooping cough** (pertussis) can sometimes be established as the cause of chronic pulmonary processes German measles (rubella), erysipelas, smallpox (variola), *chicken pox (varicella), and mumps (parotiditis)* can rarely be incriminated as causes of later diseases, but mumps may lead to orchitis, pancreatitis, and encephalitis, and vaccinia may be followed by encephalitis German measles (rubella) during early pregnancy may produce congenital defects in the fetus The dates of vaccinations against smallpox whooping cough, diphtheria, tetanus typhoid, typhus fever, or yellow fever should be recorded

Certain nervous and metabolic diseases as **exophthalmic goiter,** myxedema essential hypertension, glomerular nephritis and diabetes mellitus, in early and adult life produce latent degenerative conditions, particularly in the cardio vascular system **Dietary** indiscretions, food idiosyncrasies or *allergies, industrial dusts and occupational poisonings* and sojourn in areas of endemic disease may give clues to etiologic factors in some clinical pictures

VI The Family History is a record of the strength or weakness of the stock, which might contribute to the status of the individual The general health familial tendencies toward disease as contagious, constitutional or hereditary disorders are relevant facts, sometimes of such importance that they are developed in the present illness (P I)

Ages living or dead of **parents** and **siblings** and the causes of death are to be recorded The history of grandparents uncles cousins and occasionally of more distant relatives should be set down in the presence of a disease generally ac *cepted as hereditary It is to be remembered that some* sensitive and some with false pride will conceal information that seems to besmirch the lineal protoplasm

Inquiry must be made by direct question as to the pres ence of cases of familial or constitutional or similar disease

conditions such as **cancer tuberculosis diabetes mellitus** goiter arthritis gout **obesity** premature arteriosclerosis sudden death **apoplexy, high blood pressure,** kidney disease Bright's **nephritis** congenital hemolytic icterus or jaundice **anemia** hemophilia leucemia gastrointestinal troubles **ulcer allergies** hay fever asthma eczema urticaria migraine angioneurotic edema queerness mental and nervous disorders muscular atrophies epilepsy or insanity

VII The PHYSICAL EXAMINATIO (P E) or status praesens (S P) should be a concise yet complete record of the signs revealed in a careful study of the patient by the methods of physical diagnosis These methods employ all the senses at times taste rarely Smell may give valuable information if employed attentively along with discerning vision during **inspection** The use of the sense of touch as applied to the body is **palpation** Feeling and hearing are combined in **percussion and auscultation** These four single essential basic procedures of examination are fundamental and must be practiced regularly and assiduously to develop the skill that is prerequisite to success in diagnosis Many special instruments and laboratory procedures have been developed to improve upon our perception but these cannot displace the routine physical study with the unaided senses

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Certain nervous and metabolic diseases, as **exophthalmic goiter,** myxedema, essential hypertension, glomerular nephritis, and diabetes mellitus, in early and adult life produce latent degenerative conditions particularly in the cardiovascular system. **Dietary** indiscretions, food idiosyncrasies or allergies, industrial dusts and occupational poisonings, and sojourn in areas of endemic disease may give clues to etiologic factors in some clinical pictures.

VI. The FAMILY HISTORY is a record of the strength or weakness of the stock, which might contribute to the status of the individual. The general health, familial tendencies toward disease as contagious, constitutional, or hereditary disorders are relevant facts, sometimes of such importance that they are developed in the present illness (P.I.).

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Inquiry must be made by direct question as to the presence of cases of familial or constitutional or similar disease

This procedure may be repeated with alterations and additions after the physical examination and again after the laboratory examinations. Those who rework the case subsequently should comment on such diagnoses by adding marks as ✓ or ? or at greater length in a note.

The underlining of significant facts with red ink and the making of brief marginal notes in red facilitate greatly the complete analysis of the case record.

A concise summary containing only rechecked, corrected and verified essential points in the **history**, confirmed **physical** abnormalities, and significant **laboratory** findings, and the result of any special procedures or of study by any methods of precision should be incorporated when they have been obtained.

The Diagnosis

One of the chief objects in the handling of patients is to find out what is the matter, that is, to fix the diagnosis. This does not consist merely in giving a name to the main disease supposed to be present, but includes a knowledge of all organic and functional alterations.

The establishment of the final diagnosis, that is, the recognition of what actually ails the patient, is then the chief object in the study of each case. It is only with a clear conception of the nature of the disease process and the alteration of bodily functions which result that rational therapeutics can be instituted.

The *diagnostic statement*, therefore, does not consist merely in naming the primary disease that is present, but further in stating where and to what degree organic and functional alterations are present. Besides the primary diagnosis, the associated secondary or subsidiary diagnoses and the pathologic physiology of every affected organ should be recorded.

When an organ generally involved by a specific disease process is spared, it is worth while noting this tenta

VIII ROUTINE LABORATORY EXAMINATIONS are indispensable in the complete diagnostic study of a patient There is a minimal amount of work that must be done Usually the laboratory tests are applied after the history has been taken and the physical examination has been completed Occasionally, a sputum study for pneumococci or tubercle bacilli a leucocyte count, a blood smear in an acute febrile or abdominal condition or a urinary sediment study are made before completing the history and physical examination

The absolute minimum of routine laboratory examination requires a report on the **sputum** examination for pus blood Herz fehlerzellen, pneumococci typed and the tubercle bacilli The **urine** is to color specific gravity to be studied (especially in deliberately dehydrated patients) or after the subcutaneous injection of 0 5 cc of surgical pituitrin the reaction to tests for albumin sugar acetone and bile pigment, and a study of the sediment for erythrocytes leucocytes or casts are routinely done The **blood** hemoglobin content, red blood cell sedimentation rate volume of packed erythrocytes leucocyte and differential count and serologic examination should be done on admission The **stools** should be examined for consistency color whether tarry or fatty or acholic for the presence of blood grossly by microscopic or by the benzidine test along with microscopic study for parasites ova or digested food particles

Summary and Conclusions

It is always an interesting experiment for the person (graduate or undergraduate) who takes the history to make logical deductions and draw tentative conclusions from the symptomatology and clinical course of the disease He should commit himself in writing at the end of the anamnesis to a provisional diagnosis or a series of possible diagnoses per anamnesis based on the patient s story only (? diagnosis or multiple ??? diagnoses can be used)

patient on admission the progress of these conditions during the patient s stay in the hospital effect of therapy and the *final diagnosis* The condition on discharge, the prognosis and in a general way the final advice and *instructions* as to treatment and management that have been given to the patient upon his departure from the hospital should be recorded briefly

A paragraph as to the desired Follow Up of the case by social agencies etc should be added in every case where this seems to be indicated The specific type of information that is wanted on the patient s subsequent course should be definitely outlined in a note

Abbreviated Histories

All routine histories physical examination and laboratory studies are to be full and complete in detail and ready for critical review within thirty six hours after the patient s admission If for any acceptable reason it is impossible to get complete data as incommunicability due to difficulty with the language as in the case of foreigners for whom no interpreter can be found or in the case of comatose individuals brought in by attendants unacquainted with the situation in which the patient was found etc a note as to the reason for the absence of a history is to be made Efforts must however be continued to obtain as much data as possible from those that accompany the patient to the hospital or from his friends or from his family as soon as such individuals can be located

In critically ill patients it is often advisable not to disturb them any more than is absolutely necessary Judgment should be used and such patients spared questioning and examinations that are *not* definitely urgent The visiting physician or house officer s approval of such a decision must be obtained and this advice is to be sought in any case of doubt All possible data from other sources are to be secured

tively as "general arteriosclerosis or hypertension with kidneys apparently uninvolved" The primary diagnosis is the chief or most important affection incapacitating the patient, or causing his death The subsidiary diagnoses follow in the order of importance It is essential for progress that each examiner from student to chief, *commit himself in writing* as to his opinion of each case

Miscellaneous Notes and Directions

Progress notes are to be made at least biweekly preferably daily and in some critically ill patients frequently during each day, especially when changes are noted in the patient s general condition or in his fever physical or laboratory findings These notes should record in brief the progress of the disease process and the patient s response to definitely stated amounts of therapeutic agents

Newly discovered differential diagnostic physical or laboratory findings obtained from either routine or special studies and any definite change in the patient's condition should be promptly set down and dated

The opinions of all consultants and visiting physicians *should be recorded under the physician s name whether he dictates a formal note or not*

Transfer surgical or **autopsy** and **discharge notes** are required at the end of every history In the case of transfer of a patient give the purpose of the transfer and the name of the consultant who advised the transfer Any procedures undertaken such as **surgical** operation upon the patient subsequently should be recorded with a note as to the findings and the results In the case of death the surrounding circumstances the type of exitus respiratory cardiac cerebral or toxic should be described and an **autopsy** note should record the gross anatomic findings

The **final** or **discharge** note should be written up promptly with a review of the symptoms and signs presented by the

patient on admission the progress of these conditions during the patient's stay in the hospital effect of therapy and the *final diagnosis* The condition on discharge the prognosis and in a general way the final advice and instructions as to treatment and management that have been given to the patient upon his departure from the hospital should be recorded briefly

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In critically ill patients it is often advisable not to disturb them any more than is absolutely necessary Judgment should be used and such patients spared questioning and examinations that are not definitely urgent The visiting physician or house officer's approval of such a decision must be obtained and this advice is to be sought in any case of doubt All possible data from other sources are to be secured

After the crisis as the patient improves, the required records are to be obtained. In irritable patients, and such are not infrequent, all possible tact must be used in order to get the information required to make the records complete.

Abstracts of Previous Records.—In the history of a patient who has been previously under care either in the hospital or in the out patient clinic, it is customary to preface the new record with a comprehensive summary of the previous records. The previous hospital or medical number, and the dates of admission and discharge and the diagnoses are copied, but these alone do not constitute a satisfactory abstract. The complaints, presenting symptoms, pertinent physical and laboratory findings of the previous illness, the result of any special studies as by roentgenograms or electrocardiograms should be abstracted in brief but comprehensive statements. Significant facts in the system review, the social history, the past medical history, the marital and the family history should be noted. If the previous historian has recorded these divisions conscientiously, it will not be necessary to repeat these parts in the new case record. The diagnoses and course under treatment and a statement concerning the condition at the time of discharge should conclude the abstract of the previous record.

An **interim history** dating from the time of discharge chronologically to the time of readmission should be carefully written with details as to the presenting symptoms at the time of readmission. Any new or recalled facts not previously elicited should be incorporated.

The physical examination and the laboratory studies must be carefully and completely redone and recorded in detail as in the original case record.

Special Case Histories.—Patients admitted for arsphenamine injections, deep x ray or radium or fever therapy, or for spinal fluid, blood chemistry or basal metabolic studies are to have a routine history written and routine phys

ical and laboratory examinations made and recorded on the first admission to the hospital

On subsequent admissions the abstract of the previously recorded history and the interim history should be recorded The course of events since leaving the hospital and reason for readmission should be clearly stated A physical examination covering the diseased system and related systems is required upon each admission A comparison of the symptoms and signs recorded each time with those present previously should be made Any change in symptoms or alterations in signs should be verified by detailed examination and commented upon

Time Limits

A complete history a detailed physical examination and the routine laboratory work on each assigned case must be completed before the ward rounds at nine o clock on the second morning after the day of admission that is always within forty eight hours irrespective of Sundays or holidays

The routine laboratory tests that are required in the various types of cases are outlined under each *special system division*

Nurses and orderlies are not to be depended upon for the collection of laboratory specimens of urine feces *and sputum for* examination The cooperation of the patient is to be sought he is to be instructed as to the desired specimens and the responsibility shared with him only The *examiner* must arrange as best he *can* to get the materials for study No specimen containing abnormalities is to be *discarded* until the findings *are* verified by a senior officer

Special laboratory procedures are usually done by the junior interne with or without the assistance of the student Data on these tests must be obtained by written requests from the junior interne These data are to be incorporated in the student history

Routine Requirements as to laboratory and specimens to be obtained, and routine method and technique are outlined in Part I, Chapter X, page 67, of *Methods in Medicine* *

For Sputum, p 67
For Stomach Contents p 69
For Stools p 71
For Urine, p 74
For Blood, p 83
For Spinal Fluid, p 90
For Other Body Fluids, p 95

Special Procedures to be applied in completing satisfactorily each special type of case are outlined with sufficient technical directions for their successful prosecution in Part II, beginning with Chapter XIII, p 111, of *Methods in Medicine*

Gastrointestinal Cases, Chapter XIII pp 111 155
Renal Cases, Chapter XIV pp 157 167
Hematologic Cases, Chapter XV pp 168 188
Cardiologic Cases, Chapter XVI, pp 189 194
Endocrine Cases, Chapter XVI pp 194 204
Immunologic Studies, Chapter XVI, pp 205 208
Physiologic Chemistry Method, Chapter XVII, pp 209 257
Bacteriologic and Serologic Methods Chapter XVIII pp 258 276
Dietetic Methods, Part III p 277
Therapeutic Methods Part IV p 365

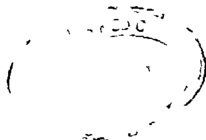
Remarks on the Order of Routine Procedure

The routine laboratory tests as outlined must be done promptly and carefully It is not necessary and often distinctly inadvisable to undertake a detailed history and physical examination before considering certain laboratory tests In urgent cases such as *acute abdominal conditions* it is

* Manual of the Medical Service of George Dock

desirable to have leucocyte counts and urine studies immediately after the completion of the preliminary survey of the patient

The routine and ordinary special laboratory examinations should always be complete before calling on consultants More elaborate methods of investigation proctoscopic examinations gastric analyses urine concentration test, blood chemistry fluoroscopic x ray studies electrocardiographic studies cystoscopy should be done in order as indicated



I (A) GENERAL HISTORY ROUTINE OUTLINE FOR INTRODUCTORY CLINICAL STUDY OF MISCELLANEOUS MEDICAL CASES

Data on the present illness should be obtained according to the suggestions and the questions outlined under each heading It is to be remembered that the patient should be urged to tell the story of his troubles from the onset to date in his own words, and these are to be recorded as long as they are reasonable and descriptive He must be guided some at times and encouraged to relate events in the order in which they occurred or developed The outline for case taking indicates only the general type of information desired and must be amplified in some sections to suit the particular case Each case is quite individual The story should be a concise and chronologically arranged expose of the patient's illness There should be included information as to the possible causative or etiologic factors, precipitating conditions functional derangements and the background in the patient's personal past and family histories The physical and laboratory examinations should reveal evidences of anatomic abnormalities

Minimal requirements call for a definite note concerning each point printed in bold face type in order to insure an adequate history or anamnesis

It is usually desirable to ask first how long have you been sick and what symptoms caused you to seek medical help?

Date of Recording

Chief Complaint (C C)—Quote only rational terse words or a pithy phrase or a trenchant sentence as the complaint Common symptoms that are complained of include one or more attacks of fever chills sweating malaise rash headache, general body muscle joint or backache sore throat cough breathlessness nausea vomiting diarrhea constipa

A definite note is necessary on each point printed in bold type in order to make a satisfactorily complete and acceptable case history

tion distention pain swelling tumor tremor weakness in a part or region, giddiness unconsciousness or vertigo

Present Illness (P I) —Develop and record chronologically completely yet succinctly, the presenting symptoms definitely established On what *date* (not the day of the week) and as a result of what causes and precipitating factors and under what circumstances did the very first discomfort or symptoms of trouble appear? Was the onset *sudden* dramatic precipitate or gradual and insidious? When did the patient become conscious of the presence of trouble? Where did the patient first feel distress and how severe was it? How long did it last? Was it continuous or intermittent? Were there recurrent attacks? How frequent were these? Was there any change in the character or any spontaneous increase or decrease in severity? Was there any response to specific treatment? What specific drugs if any brought relief or failed? In what amounts and over what length of time was each drug administered? Have there developed accompanying or additional symptoms? When did these appear and disappear or change? Delineate the course of the disease

What is the *patient* s opinion in regard to the progress of his condition? When was he forced to give up his work or activity such as walking and when did he take to his bed and for what reason? To avoid omissions ask if there have been any other symptoms that have been inadvertently overlooked

Personal History (Pers H) – Record place of birth and residence general health *disposition* education and training environments and living *conditions* economic and community status intellectual and social *development* interests and adjustments Is he religious or indifferent a paragon or delinquent

Note habits of exercise relaxation sleeping eating drinking and defecation amounts and type of fatty foods salt tea coffee alcohol tobacco and any other drugs or medicines especially sedatives used excesses and indiscretions

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Note **habits** of exercise relaxation sleeping eating drinking and defecation amounts and type of fatty foods salt tea coffee alcohol tobacco and any other drugs *or medicines* especially sedatives used excesses and indiscretions

Psyche, Mental Status or Make up, Personality Traits or Functions, Life s Moods

Personality—Note development from early life through education, evidence of native intelligence, bright or dull, progress in school, any failure, grade reached, age and reason for quitting school Establish social adjustment, attitude toward parents, teachers, brothers, sisters, fellow students, home life, school life, learning, work, privileges and pleasures of childhood and adolescence, hopes, ambitions, prospects realizations religion, bad habits, sexual desires, practices or experiences employment and society in general Determine degree of and character of habituations, exposure to toxic substance Reactions to illness, lot in life, experiences, disappointments, bachelorhood or spinsterhood are of importance (See Chapter X, pp 144 148)

Analyze the patient for his psychic makeup temperament or mood as an **extrovert,** sociable happy, hopeful, energetic enthusiastic, elated, fortunate contented, satisfied **Maniacal,** overly lively, domineering, volatile, grandiose, lack of persistence, restless, irresponsible **Introvert,** introspective shy, retiring careful, *quiet* **Melancholic,** sad moody, depressed, worrisome, unstable complaining fearful **Paranoiac,** hypersensitive, suspicious, delusionary, hallucinatory Adequacy of causes Note imagination, insight, ideas, stability *stream of mental activity, dependability, conscientiousness,* stolidity, perplexity, apathy, or psychomotor preoccupation It he out of luck resentful irritable asocial subject to spasms, faints fits convulsions, tantrums or compulsions?

Marital History (*M H*)—Note status, age at marriage health, and compatibility of mate ages and health of children, any miscarriages stillbirths, puerperal infections Note use of contraceptives, types, reactions to them financial stress separation or divorce?

Occupation Record nature of work, environs, responsibilities tension, worries hours, night work excessive fa

tigue vacations promotions and ambitions Any changes in jobs if so for what reasons? Any exposure to elements or industrial hazards?

Review of Systems

Head and Neck—Eyes Ears Nose and Throat (E E N & T)

Head.—Inquire as to trauma frequent colds head ache and pain with such details as to location and time severity duration character radiation and method of relieving **Eyes** pain eyestrain inflammation puffy lids **Vision** normal or gradual or sudden failing glasses type **Diplopia**, specks spots or flashes in the visual fields **Ears** aching pain discharge tinnitus **hearing** loss **Nose** discharge epistaxis colds or symptoms of obstruction pain over sinuses olfactory sense smell loss or perversion **Mouth** and **tongue** soreness canker taste loss salivation **Gums** and **Teeth** bleeding sensitivity devitalizations aches bridgework caries **Throat** and **pharynx** frequent or infrequent sore throat tonsillitis quinsy dysphagia hoarseness dysphonia or aphonia

Neck—Establish history of stiffness enlarged glands tenderness soreness pain or throbbing

Skin—Determine whether there have been any rashes eruptions or hives in single or recurrent attacks

C R (Cardiorespiratory Respirocirculatory)—

Respiration—Ask concerning **cough**, type hacking or continuous or paroxysmal intermittent or positional dry expectoration, with or without **hemoptysis** pyoptysis froth or phlegm foul or fruity odor **fever**, night sweats (noctidrosis) **chills** (rigors) pain accompanying restricted chest movement weakness malaise or asthenia Irregular or periodic breathing Wheezing attacks **Asthma**

Circulatory—Interrogate as to **dyspnea**, orthopnea palpitation, precordial distress or substernal oppression lo

Psyche, Mental Status or Make up, Personality Traits or Functions, Life s Moods

Personality —Note development from early life through education, evidence of native intelligence bright or dull, progress in school, any failure, grade reached, age and reason for quitting school Establish social adjustment, attitude toward parents, teachers brothers, sisters, fellow students, home life, school life, learning, work, privileges and pleasures of childhood and adolescence hopes, ambitions prospects, realizations religion, bad habits sexual desires, practices or experiences, employment and society in general Determine degree of and character of habituations, exposure to toxic substance Reactions to illness, lot in life, experiences disappointments bachelorhood or spinsterhood are of importance (See Chapter X, pp 144 148)

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Occupation Record nature of work environs responsibilities, tension worries hours, night work excessive fa

amount (profuse or scanty) **Abnormalities** metrorrhagia menorrhagia amenorrhea or absence, date of last period dysmenorrhea painful menstruation method of relief, vaginal discharge leucorrhea during or after period Date of **climacterium or menopause and associated symptoms** Discharge after menopause character bloody or foul

N M (NEUROMUSCULAR NERVOUS) —Cross examine as to **temperament** disposition **memory** changes nervous spells hot flushes **sleep** insomnia sleep walking dreams sense of equilibrium giddiness dizziness vertigo **fainting** twitchings spasms convulsions numbness anesthesia tingling **paresthesia** Weakness or wasting in part **ataxia** difficulty in walking **pains** sharp shooting along nerve course in muscles or in joints girdle sensation paralyses tremors or incoordination

Mental changes are often noted by others than the patient or his relatives Extravagance in plans or expenditures expansive imagination grandiose ideas personality make up attitude behavior preoccupation delusions or hallucinations and degree of insight are significant data

General Health.—Determine whether delicate or robust state of strength and muscle development **Weight** best usual present stationary loss gain over what period of time degree of weakness if any **Injuries or operations** dates nature seriousness complications and ultimate results Note rejection after life insurance selective service induction center Army Navy Marine or Air Corps examinations area of Service with Armed Forces Discharge with or without disability

PAST HISTORY (P H) —May best be described in reverse chronology with the most recent illness first

Investigate critically as to date of duration of symptoms of and any complications of

Pneumonia bronchopneumonia **influenza pleurisy tuberculosis typhoid fever typhus fever malaria filariasis** worm **infestations gonorrhea** or **syphilis** or allergic reactions

calized or radiating cardiac pain with exertion or at rest **Edema, swelling** of extremities or abdomen, congestion **cyanosis or jaundice,** weakness, **vertigo, syncope,** convulsions

G I GASTROINTESTINAL —

Digestion —Seek information concerning *appetite, thirst hiccup, eructation,* **nausea, vomiting, hematemesis,** *indigestion* or fullness or more specific gaseous **distention,** belching or passage of flatus Food idiosyncrasies, phobias, dietary fads or restrictions **Pain,** epigastric distress, duration, type uninterrupted, cyclic, periodic recurrent, relation to meals method of relieving, accompanying loss of weight, colic jaundice, flatulence or borborygmus Elimination or defecation condition of bowels, **constipation** or **diarrhea,** with or without tenseness Abnormal stools containing mucus pus blood bright red streaked or mixed ' (hemat[illegible]) foul sticky tarry (melena) or clay colored (acholic) stools Note history of hemorrhoids or of seeing gross parasites

G U (GENITOURINARY—UROGENITAL) —

Urinary —Investigate as to burning on micturition, **frequency,** by night **(nocturia),** by day **(diuria),** difficulty in starting, forceless stream sudden stoppage with *pain* **urgency,** strangury, urina spastica **dysuria,** pain before, on start during, or after Amount **polyuria, oliguria,** or anuria Pollakiuria ischuria, hesitancy **retention,** overflow dribbling **incontinence,** enuresis **hematuria, smoky urine,** pyuria, **cloudy urine,** pneumaturia Attacks of **colic** into genitals or passage of gravel, stone ' or testicular ache

Genital —Pry into **sexual** history as to habits, genital **discharge,** strain **sore** trauma sexual disturbances or perversion, libido impotency frequency of sexual intercourse complete or interrupted *with* or *without satisfaction*

Catamenia or Menses —Put questions as to menarche or *age of* appearance of menstruation regularity duration

I (B) GENERAL ROUTINE OUTLINE FOR PHYSICAL EXAMINATION IN MISCELLANEOUS MEDICAL CASES*

Physical Examination

DATE

I STATUS GENERAL CONDITION —

BODY TEMPERATURE PULSE AND RESPIRATION RATES

NUTRITIONAL STATE —**Body in General** height and weight, bony frame large or small muscular development thickness of subcutaneous **panniculus** obesity emaciation cachexia anasarca Condition of skin in general size and consistency of muscles tenderness may give clues to gross deficiency diseases as scurvy pellagra and beriberi

Posture Station or attitude positions assumed decubitus reclining propped up sitting up or standing erect **General appearance** as to illness or health

Psyche or mental status oriented confused delirious apathetic stuporous soporific or comatose **Expression** painful anxious staring placid vacant stupid **Reaction** to situations excited erethistic restless phlegmatic **Sensorium** clear or beclouded memory or speech difficulty halting stuttering dysarthria anarthria aphasia

II HABITUS-ENDOCRINE BALANCE —Hypersthenic sthenic hyposthenic or asthenic brachylineal *or* longilineal types (see Figs 1 to 4 pp 66 69)

Constitutions diatheses Pyknic arthritic exudative hypoplastic atonic or hypertonic spasmophilic hemorrhagic or thymicolymphatic

Types and Components (Wm H Sheldon) **Ectomorphic,** displaying prominent features of ectodermic origin fragile delicate body framework spindly bones small face sharp nose stringy muscles thin dry sensitive skin long thin forward bent neck quick growing hair prominent genitalia

* A d finit n te i n [illegible] ry on ea h point printed in bold face type is [illegible] an accept [illegible] of the [illegible] practice of physical examination

Metabolic and nervous disorders Exophthalmic goiter myxedema, essential hypertension, glomerular nephritis, diabetes mellitus

Rheumatic fever, chorea, subcutaneous nodules, growing pains, pharyngitis, tonsillitis streptococcic or septic sore throat, scarlet fever, diphtheria, or erysipelas

Measles, rubeola or morbilli variola varicella, pertussis parotitis or vaccinia

FAMILY HISTORY (F H)—Record for father mother brothers and sisters the ages and dates of illnesses suffered and health status If dead, establish ages at, and causes of death Get a history of grandparents if there be a suggestion of hereditary disease

Familial tendencies should be delved into and recorded with especial reference to **tuberculosis**, scrofula, rheumatic fever, or hereditary affections as **cancer**, gastrointestinal diseases **diabetes mellitus, obesity,** gout, goiter, **hypertension, apoplexy, Bright s disease, sudden deaths,** premature arteriosclerosis rheumatoid arthritis hemolytic congenital jaundice anemia leucemia, or hemophilia Nutritional disturbances or deficiency diseases

Familial **allergic manifestations** as asthma hay fever urticaria, eczema, or migraine and number of members affected

The personality make up of the parents and others in the home or nest, the home environment the fundamental family life emotional clashes and attachments play potent roles in the lives of some who later on may breed

Psychiatric reactions queerness nervousness epilepsy, and mental or nervous or muscular diseases may be transmitted to the offspring

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Mesomorphic, square, hard, rugged body, conspicuous muscles, large prominent bones, heavy chest, broad shoulders, powerful arms, wrists and hands, broad hips, sturdy pelvis, legs and feet **Endomorphic,** prominence of features of endodermal origin as abdominal organs, roundness and softness of body, central concentration of mass short neck, small bones, weak, short tapering limbs, small hands and feet There is a welter of mixed types (Ernst Kretchmer)

Facies, asymmetric, Mongolian cretin, adenoid, agnathic acromegalic prognathic exophthalmic pallid, puffy, nephritic, myxedematous Parkinsonian or masklike of paralysis agitans Hippocratic, alcoholic, allergic, adenoid, phthisical cardiovascular, mitral, aortic hepatic saturnine, or mercurial features should be noted

III Mucous Membranes Skin and Appendages —**Allergic reactions, color,** pallor, ruddiness floridity flush, cyanosis **pigment,** icteric or jaundiced **Eruptions,** ulcers, scars, keloids tumors, nodules, papules, macules, vesicles blebs pustules scales, or crusts desquamation, **petechiae** purpura or ecchymoses, **edema,** subcutaneous emphysema Trophic state or elasticity Nevi, or birthmarks **Character and texture,** moist cool dry warm smooth soft satiny rough hard callused stunted Hair beard hypertrichosis hirsuties Nails brittle spooned, or ridged

Local Observations in Detail

IV Head and Neck —

1 *Skull* —**Size,** shape contour symmetry, protrusions, exostoses or depressions fontanelles Brachycephalic, dolicocephalic, rachitic, hydrocephalic, microcephalic, oxycephalic or steeple dome **Scalp** cleanliness ulcers **hair,** texture **eyebrows,** thin Cranial nerve status Ask patient to look up, wrinkle forehead close eyes show teeth protrude tongue, purse lips inflate cheeks and whistle Tap the facial nerve in front of the ear for Chvostek's sign of spasmophilia

Eyes Vision, gross disturbance in general color glasses type amount of correction Pupils shape size regularity equality reaction on convergence or in accommodation may be fixed to light as Argyll Robertson pupils **Sclerae** color and vascularity Position and tension of eyeballs Exophthalmos or enophthalmus **Conjunctivae** inflammation hemorrhage **Opacities** in corneae media lens **Photophobia**, diplopia nystagmus **Extraocular** movements **Eye** lids lagging puffiness or showing xanthelasma **Ophthalmoscopic** observation of media lens optic discs *or nerve heads* retinal arterioles constriction copper or silver wirelike irregularity of lumina sclerosis broadened central white streak, tortuosity arteriovenous nicking hemorrhage or exudate arteriolar size compared to veins

Ears Hearing tested with a watch discharge **tender**ness over pinna or **mastoid**, cyanosis tophi, or *stigmata* *Otoscopic* examination is done routinely in children and when indicated *in adults*

Nose Sense of smell shape septum perforation epistaxis discharge **obstruction** in air passage o ena Rhinoscopic examination when indicated Tenderness over sinuses

Mouth Lips *cheilosis* rhagades herpes angular stomatitis oral mucosa pigmentations salivation *parotid and* submaxillary *duct orifices* Koplik spots leucoplakia mucous patches ulcers aphthous herpetic stomatitis **Gums** color bleeding spongy retracted showing pyorrhea *lead or* bismuth line **Teeth** spacing malocclusion grinding surface missing crowned, devitalized **Tongue** tremor protrusion glossitis atrophy *hypertrophy* geographic furrowed coated furred white or brown Gagging and swallowing reflexes sense of taste Nasopharyngeal findings exudate or bulging **Breath**, foul or fruity

Throat Palate tonsils exudate crypts film scar tissue on surface pharynx membrane post nasal drip Laryngoscopic study is necessary when there *are* voice changes

Neck Type, motility, stiffness or rigidity of muscle abnormal pulsations of carotid arteries, thrills or bruits i carotids or over the thyroid gland, jugular neck veins en gorged, or pulsating Brudzinski and Kernig signs

Adenopathy, discrete or fused, lymphatic cervical chains Tracheal tug Deviation of trachea Tenderness along cervical spine

Thyroid gland enlargement vascular diffuse, or nodular

2 *Thorax*—

***Chest** in general* size symmetry, shape, or **form,** spina curves, tumors, pulsations, expansion

Breasts, size tenderness, tumors, or scars

V LUNGS—**Inspection** as to **type of breathing** **Palpation** of respiratory movements as to expansion, depth rate and rhythm, *Litten s sign, muscle tension* atrophy, *tenderness* tactile, vocal or rhonchial fremitus Vital capacity actual per cent of normal **Percussion,** resonance degree abnormal ities heart and liver borders gastric tympany Excursion of posterior base, dullness or flatness **Auscultation** Breath, voice whispered or adventitious sounds rales, fric tion rub

VI HEART—**Inspection** as to location and character of **apex impulse,** abnormal pulsation or retraction Broad bent's signs palpation **shocks, thrills** or friction fremitus percussion of great vessel **dullness,** retromanubrial supra *cardiac or aortic and cardiohepatic angle areas* ***Outline*** of the heart border in each interspace and record measure ments Look for Traube s semilunar tympany Ausculta tion, note character of heart **sounds** intensity rhythm rate, reduplications **gallop** rhythm or adventitious sounds fric tion rubs and murmurs Determine location character, time degree of loudness and transmission of any **murmurs**

VII PERIPHERAL VASCULAR SYSTEM—Inspect palpate and auscultate the accessible peripheral arteries for hard ness for thickness for tortuosity and for thrills and mur murs synchronicity and character of pulses Take the

blood pressure in both upper arms and if elevated determine pressures in the popliteal arteries

VIII ABDOMEN —**Inspection** as to size and shape or contour tumor masses peristalsis prominent veins or scars **Palpation** panniculus thickness tension voluntary resistance hyperesthesia rigidity areas of tenderness in abdominal quadrants or in costovertebral angle Masses hernia epigastric umbilical inguinal or femoral size and condition of rings tussive impulse on coughing **Percussion** for flank dullness that shifts or fluid wave size and position of any palpable and enlarged organs as liver spleen kidney cecum colon bladder uterus or ovary **Auscultation** if indicated for borborygmus or friction sounds or murmurs

IX ANUS AND RECTUM —**Inspection** of perineum for hemorrhoids prolapse fissures fistulas ischiorectal abscess **Digital palpation** tenderness tone of sphincter size of prostate gland seminal vesicles rectal stricture or masses Rectoscopic proctoscopic or sigmoidoscopic examination

X GENITALIA —**Inspection** for abnormalities of secondary sexual characteristics as hair distribution and hypo or hypergenitalism Note deformities as epispadias or hypospadias **urethral** discharge and glans lesions ulcers or scars **scrotum,** spermatic cord varicocele hydrocele testes epididymis size shape location **Palpation** for inguinal glands consistency tenderness of each testicle and epididymis for masses or tumors Digital palpation prostate and vesicles feel for Cowper s glands and Blumer s shelf

Vulval and vaginal examination (only with a witness) Urethral caruncle discharge hymen Bartholin s and Skene s glands Vaginoscopic study cervical erosion discharge scar or tumor Pelvic bimanual palpation of uterus tubes or ovaries

XI BACK AND EXTREMITIES —**Inspection** of spine curvatures deformities kyphosis scoliosis spondylitis mobility tenderness crepitus arthritis **Deformities** in joints bones

Neck Type, motility, stiffness or rigidity of muscles abnormal pulsations of carotid arteries, **thrills** or bruits in carotids or over the thyroid gland, jugular neck veins engorged, or pulsating Brudzinski and **Kernig** signs

Adenopathy, discrete or fused, lymphatic cervical chains Tracheal tug Deviation of trachea Tenderness along cervical spine

Thyroid gland enlargement vascular, diffuse or nodular

2 *Thorax* —

Chest in general size, symmetry shape, or **form,** spinal curves, tumors, pulsations, expansion

Breasts, size tenderness tumors or scars

V Lungs —**Inspection** as to **type of breathing** Palpation of respiratory movements as to expansion, depth rate and rhythm, Litten s sign, muscle tension atrophy, tenderness tactile, vocal or rhonchial fremitus Vital capacity actual per cent of normal **Percussion,** resonance degree abnormalities, heart and liver borders gastric tympany Excursion of posterior base, dullness or flatness **Auscultation** Breath, voice whispered or adventitious sounds rales friction rub

VI Heart —**Inspection** as to location and character of **apex impulse,** abnormal pulsation or retraction Broad bent s signs palpation **shocks, thrills** or friction fremitus, percussion of great vessel **dullness,** retromanubrial supra cardiac or aortic and cardiohepatic angle areas **Outline** of the heart border in each interspace and record measurements Look for Traube s semilunar tympany Auscultation, note character of heart **sounds** intensity rhythm rate reduplications **gallop** rhythm or adventitious sounds friction rubs and murmurs Determine location character time degree of loudness and transmission of any **murmurs**

VII Peripheral Vascular System —Inspect palpate and auscultate the accessible peripheral arteries for hardness, for thickness for tortuosity and for thrills and murmurs synchronicity and character of pulses Take the

blood pressure in both upper arms and if elevated determine pressures in the popliteal arteries

VIII ABDOMEN —**Inspection** as to size and shape or contour tumor masses peristalsis prominent veins or scars **Palpation** panniculus thickness tension voluntary resistance hyperesthesia rigidity areas of tenderness in abdominal quadrants or in costovertebral angle Masses herniae epigastric umbilical inguinal or femoral size and condition of rings tussive impulse on coughing **Percussion** for flank dullness that shifts or fluid wave size and position of any palpable and enlarged organs as liver spleen kidney cecum colon bladder uterus or ovary **Auscultation** if indicated for borborygmus or friction sounds or murmurs

IX ANUS AND RECTUM – **Inspection** of perineum for hemorrhoids prolapse fissures fistulas ischiorectal abscess **Digital palpation** tenderness tone of sphincter size of prostate gland seminal vesicles rectal stricture or masses Proctoscopic proctoscopic or sigmoidoscopic examination

X GENITALIA —**Inspection** for abnormalities of secondary sexual characteristics as hair distribution and hypo or hypergenitalism Note deformities as epispadias or hypospadias **urethral** discharge and glans lesions ulcers or scars **scrotum**, spermatic cord varicocele hydrocele testes epididymis size shape location **Palpation** for inguinal glands consistency tenderness of each testicle and epididymis for masses or tumors Digital palpation prostate and vesicles feel for Cowper s glands and Blumer s shelf

Vulval and vaginal examination (only with a witness) Urethral caruncle discharge hymen Bartholin s and Skene s glands Vaginoscopic study cervical erosion discharge scar or tumor Pelvic bimanual palpation of uterus tubes or ovaries

XI BACK AND EXTREMITIES —**Inspection** of spine curvatures deformities kyphosis scoliosis spondylitis mobility tenderness crepitus arthritis **Deformities** in joints bones

exostoses, and muscles Tremors, weakness, paralysis, atrophy or hypertrophy, claw, spade or artistic hands or feet clubbed fingers or toes Flush of thenar or hypothenar eminences Bowlegs, knock knees, saber shins, flatfeet, *varicose veins, ulcers, epidermophytosis of nails or interdigital folds* **Palpation** for palmar or tendon fibrosis, temperature of parts, effect of changes of position, femoral, popliteal, dorsalis pedis, and posterior tibial as well as radial, brachial and carotid pulses Look for evidences of phlebothrombosis, phlebitis, and lymphangitis

Lymphatic glands, system areas palpate for enlarged angular submental, cervical, supraclavicular, axillary, epitrochlear, groin or inguinal and rarely femoral and popliteal glands

XII NERVOUS SYSTEM —**Inspection** for tremors of tongue, *fibrillary movements, jactitation, carphologia, subsultus tendinum* **Reflexes** Record as reduced, abolished, or exaggerated, pupillary, conjunctival, corneal pharyngeal or gag reflexes, **superficial**, skin, abdominal and cremasteric deep or tendon reflexes **biceps, triceps, radial periosteal,** *and* **patellar** or knee and ankle or **Achilles** jerks Test for ankle clonus and abdominal reflexes, as **Hoffmann s, Babinski s,** and for **Lasegue s** sign and **Romberg's,** Rombergism

Motor status coordination, and weakness Note gait, limping, steppage, staggering, reeling, waddling, spastic hemiplegic or paralytic Palsies of motor function Ataxia

Sensory test touch, temperature pain sense of motion and position, coordination

XIII LABORATORY STUDIES —Routine blood and urine analysis, and studies of sputum vomitus gastric contents and feces should be carried out

The **urine** as to color and specific gravity, especially after dehydration or after injection of 0 5 c c surgical pituitrin Reaction to tests for albumin, sugar, acetone and bile pigment, and a study *of the sediment for erythrocytes leucocytes,* or casts

The blood for hemoglobin content and sedimentation rate Get volume of packed erythrocytes get leucocyte count and a smear for a differential count and serum for serologic examinations

The sputum examination for pus blood Herz fehlerzellen pneumococci typed and tubercle bacilli

The feces consistency, color, whether tarry or fatty or acholic bloody or guaiac negativity, along with microscopic study for parasites ova or undigested food particles should be reported

XIV SUMMARY consists in

A brief summing up of the significant positive evidence in the history and physical and laboratory studies followed by

Diagnoses—etiologic anatomic and functional

Progress notes—supplementary findings

Therapeutic results—transfer or discharge notes

ANATOMIC OUTLINES FOR DIAGRAMMING REGIONAL ABNORMALITIES

A set of rubber stamps of these forms is kept on each ward and one best representing the region of the lesion is selected and stam[ped] on the history sheet along with the physical examination and the [ab]normality sketched in the diagram Various other forms are shown [in the] history sheets of Part V, *Methods in Medicine*

HABITUS GROUPS

DESCRIPTIONS AND OUTLINES SHOWING POSITIONS OF ORGANS IN EACH TYPE

Anatomic Outlines Conforming to Habitus Types

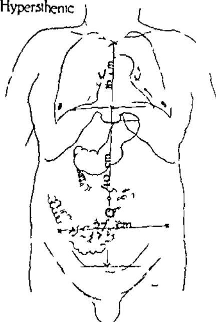


Fig 1—Certain of the visceral topographical peculiarities of th[e] hypersthenic a dominant major type are here indicated in an or[tho]graphic visceral study The visceral peculiarities of the hypersthenic ar[e] a high digestive plant of great tonus a transverse heart lung field broad at the base narrowing to the apex and anteroposteriorly deep . rapid alimentary motility is also characteristic

Anatomic Outlines Conforming to Habitus Types



Fi[illegible] —Certa[illegible]n of th[illegible] v[illegible]c[illegible]ral peculi[illegible]riti[illegible]s of the sthenic are here in dicat[illegible]d The dra[illegible]in[illegible] [illegible] an o[illegible]thodiagraphic st[illegible]dy The thorax being relati[illegible]ly short, th[illegible] lun[illegible] fields are [illegible]id[illegible]st at the base the heart moder at[illegible]ly transvers[illegible] T[illegible]e ab[illegible]om[illegible]n is rather long its visc[illegible]ra mod[illegible]rately high in ke[illegible]pin[illegible] w[illegible]th th[illegible] abd[illegible]mi[illegible] [illegible]r[illegible]gional capaciti[illegible]s. Tonus is marked and [illegible]n[illegible]stina[illegible] mot[illegible]ty more rapid than the a[illegible]erage

Anatomic Outlines Conforming to Habitus Types

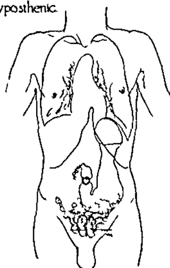


Fig 3 —Certain of the visceral peculiarities of the hyposthenic are here shown in an orthodiagraphic study The thorax being moderately long the lung fields are intermediate in their general proportions The heart is pendent resembling that of the asthenic. The stomach and other alimentary viscera are moderately low though less so than in the asthenic chiefly on account of the larger pelvis of the latter Visceral tonus is rather poor and motility of average rate

Anatomic Outlines Conforming to Habitus Types

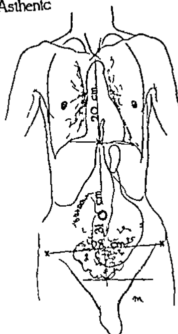


Fig 4—The visceral form and arrangement of the asthenic, a dominant major type. The visceral characteristics of the asthenic are a low digestive plant of poor tonus and slow motility The heart is vertical, the lung fields long and widest in their upper zones. Visceral topography and form as here shown are very apparently determined by bodily proportions and regional capacities Special attention is directed to the disharmonically wide and capacious pelvis the distance between the anterior iliac spines being actually greater than in the hypersthenic subject.

Anatomic Outlines Conforming to Habitus Types

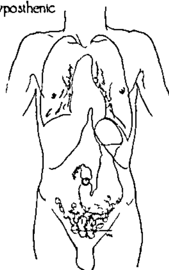
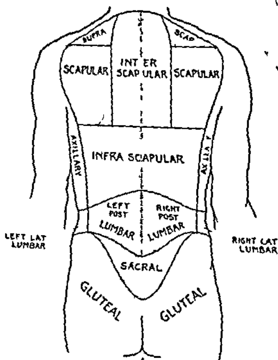


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Fi 6 —I lon and surf ce landma ks B ck

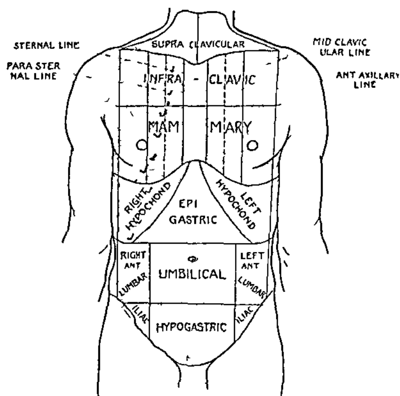


Fig ᵤ—Reg on an l surface landmarks Front

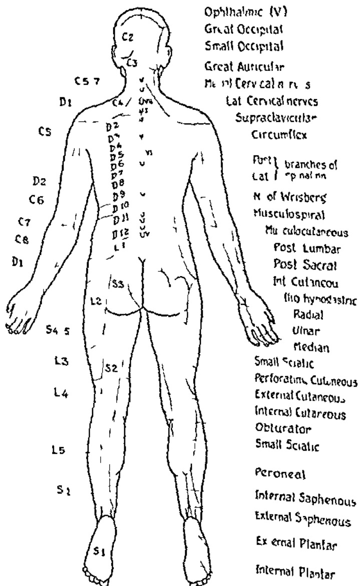


Fig 8.— kin an l segme tal n rve distribution Pack.

NOTE The four composite drawing of regional divisions and n rve di trib tion were kindly prepared for this manual by Mr Cha les Midlo

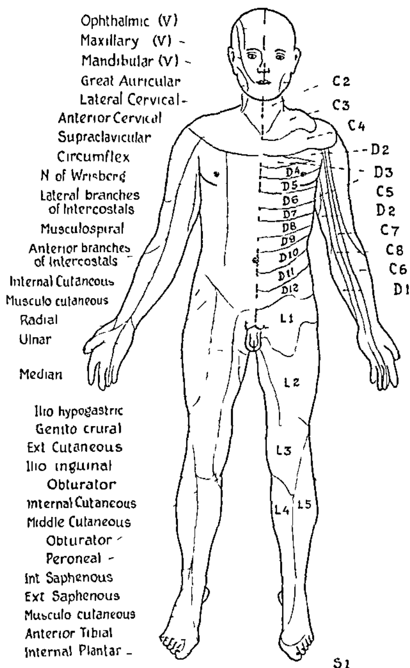


Fig 7—Skin and segmental nerve distribution Front

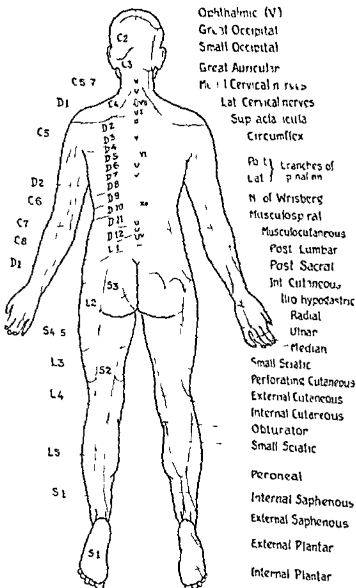


Fig 8 —Skin and s gmental nerve distribution. I ack

NOTE The fou composite drawing of regional divisi ns and nerve di trib ition were kindly prepared f r thi manual by Mr Cha l s Midlo

THE ESSENTIAL HISTORY, PHYSICAL AND LABORATORY STUDIES FOR SPECIAL TYPES OF CASES

II SEMIOLOGY IN CASES SUGGESTING METABOLIC, ENDOCRINE, AND HEMATOLOGIC DISORDERS

C C, in Diseases of Metabolism, Ductless Glands and Blood are weakness, lassitude, nervousness tremulousness, blushing, headache, blurred or half vision hunger thirst change of voice, hoarseness slowness of speech, drowsiness, somnolence, loss or gain in weight, excessive growth dryness or falling out of hair, deepening of skin coloration changes in sexual vigor, amenorrhea bleeding from nose gums mouth or uterus, metrorrhagia, or into the skin as purpura or ecchymoses, pallor and weakness, enlargement of glands or swelling of the abdomen, numbness or tingling of the extremities sore tongue, or diarrhea

P I in Metabolic, Endocrine or Hematologic Disorders—Note especially asthenia get particulars as degree of weakness slight grade to complete collapse or crises changes of appetite hunger, thirst, loss of weight gain of weight visual disturbances, partial blindness hemianopsia total loss of vision amaurosis Establish exaggeration or retardation of sex psyche or instinct increased or decreased sexuality frigidity, excessive libido virility potency impotency nymphomania, or sterility

General Health—Note *weight* gain or loss *amount and* period of time in which it occurred

R of S S

Head *Headache*—get details characteristics location associated symptoms

Hair Loss or hirsutism degree date of onset use of depilatory or bleaching methods skin pigmentation or change

E E N T Note any changes in *vision* or in *hearing* deafness, tinnitus vertigo in *speech* rate or *voice* character Note

epistaxis spongy bleeding gums mucosal hemorrhage pete chiae or ecchymosis

G I Inquire into symptoms in detail as to diarrhea tarry fatty voluminous or frothy stools hemafecia or melena

G U Any secondary sexual changes early over developed or late underdeveloped should be noted

N M Inquire as to anomalies of sleep or waking attacks of drowsiness somnolence narcolepsy mental or personality change Note any history of coma investigated

Per H In Metabolic Endocrine and Blood Cases —Record injuries to head and operations especially on thyroid gland pregnancies or frequent abortions Note injurious mental habits or emotions shock business reverses nervous strains worry A story of overeating (chef or waiter) over drinking (bartender or bootlegger) or exposure to extremes of temperature should be set down The question as to the use of drugs as arsenicals sulfonamides aminopyrine barbiturates and exposures to x rays radium or benzol fumes are significant in all cases of granulocytopenia bone marrow or blood dyscrasia

PH in Metabolic Endocrine and Hematologic Cases —Investigate previous history for evidences of severe acute infectious disease involving as complications the brain or endocrine or external secretory or excretory glands producing evidence of acute encephalitis thyroiditis mastitis hepatitis pancreatitis splenitis adrenalitis nephritis *or orchitis*

Inquire as to such infectious diseases as catarrhal or infectious jaundice mumps scarlet fever syphilis and tuberculosis Record any evidence of chronic thyroid gastrointestinal or liver or kidney disease sufferings from chronic intestinal infections or parasitic infestations and vitamin deficiencies Also inquire into drug idiosyncrasies or addictions the presence of disease in the past that might disturb blood chemical relations or the hemopoietic system as severe infections In bone marrow diseases inquire especially as to indications of probably spontaneous or therapeutic remissions

F H in Metabolic, Endocrine, or Blood Disease—Investigate histories of relatives most carefully for obesity, exophthalmic or simple goiter, arthritis, gout, diabetes mellitus and insipidus, glycosuria, pentosuria, alkaptonuria, cystinuria, hemoglobinuria, hemophilia, hemolytic familial icterus, thrombocytopenia, or jaundice or splenic, liver and renal disease

Also inquire in cases of blood dyscrasias as to similar cases in the family as chlorosis, anemia, leucemia, allergies, or idiosyncrasies

Special Physical Examinations in Types of Cases

P E in Endocrine Metabolic or Hematologic Cases—Certain more detailed physical studies are desirable

The body temperature is of significance In hyperthyroidism or hyperpituitarism it is normal or slightly elevated and in hypothyroidism or hypopituitarism it is often subnormal

GENERAL OBSERVATIONS IN DETAIL—General hormonic signs Patient may be overstimulated, restless, nervous tremulous, flushed, psychically unstable, temperamental, or loquacious or, on the other hand, dull, stuporous, apathetic, somnolent retarded, deficient, hibernating, vegetating, confused, disoriented with loss of memory Gigantism with small narrow head occurs in preadolescent with a large broad head in postadolescent hyperpituitarism

Body in General—

Undergrowth of all bones, dwarfism, infantilism, anangioplasia may represent Lorain Levi ateleiosis the proportions of a miniature adult are associated with preadolescent anterior hypopituitarism or Hastings Gilford's progeria the dwarfism with premature senility Precocious, premature physical development with retention of infantile dimensions suggests preadolescent pituitary and adrenal cortex disorders Undergrowth of acral short and flat bones only with normal long bones occurs in postadolescent hypopituitarism

Overgrowth of all bones the gigantism of Launois suggests preadolescent hyperpituitarism Overgrowth of acral short and flat bones only with normal long bones constitutes acralism or acromegaly of postadolescent hyperpituitarism

Inversion of physical type toward that of the opposite sex or eunuchoid, wide pelvis with genu valgum in a male and narrow pelvis with genu varum in a female suggest adolescent hypopituitarism or hypogonadism

Analysis of Body Proportions

Compare measurements *Torso,* vertex to symphysis and *lower stride* symphysis to soles *upper span* tip of one middle finger to tip of the other with arms outstretched and total *height*

Normal Torso = lower stride Upper span = height

Eunuchoid Torso < lower stride Upper span > height

Acral (acromegalic) Torso > lower stride Upper span < height

Note frame stature and body weight Record habitus as hypersthenic sthenic hyposthenic or asthenic brachylineal or longilineal endomorphic mesomorphic or ectomorphic (See Figs 1 to 4) Are musculature strength and endurance proportionate to development either super or subnormal with fatigability and weakness?

LOCAL OBSERVATIONS IN DETAIL —Local hormonic *signs*

Subcutaneous Fat —Note distribution buffalo type Fat pads develop in the neck supraclavicular dorsal hand and dorsal foot regions in hypothyroidism in the hypogastrium flanks and girdle regions in hypopituitarism in breasts and suprapubic regions in hypogonadism Puffy face pot belly and purple abdominal striae with emaciated spindly spider like arms and legs suggest Cushing s pituitary basophilism and adrenal cortical tumor

Subcutaneous myxedematous infiltration is generalized *Sclerodermatous* atrophy is usually more prominent in the face and in the upper extremities showing later also sclero-

dactylia It may be localized as morphea and may be associated with parathyroid disease but is most generally thought of as due to peripheral neurovascular disorders Note trophic changes, edema, pruritus, urticaria, sweating, flushing, or tophi

Facies may show changes in features, peculiarities, setting of lips, expression may be anxious or staring, as in exophthalmic goiter, or face may look stupid pasty, pale, sallow bloated, in cachexia thyreopriva, myxedema or cretinism Puffiness with bags under the eyes also suggests chronic nephritis Configuration of face or the general outline may be round, square, triangular, nose and chin may be small pointed fine sharp, peaked blunt thick enlarged There may be prognathism, or whopper jaw with heavy superciliary ridges of acromegaly or agnathism of the eunuch Blunting of facial bones is present in adrenal cortex disease, triangular facies suggest Paget's disease of the bones Oxycephaly, a steeple dome with shallow orbits, exophthalmos and persistent fontanelles high light the Hand Schuller Christian syndrome 'pudding face'' of Fearnsides or Loraine or Frohlichs syndrome is present in pubescent or shortly post adolescent hypopituitarism the delicate eunuchoid giant's face appears in preadolescent and the coarse acromegalic giant s pugilist's or pugnacious face in postadolescent hyperpituitarism

Skin —Note perspiration oiliness, desquamation dryness elasticity, icteric or lemon yellow coloration pigmentation chloasma depigmentation vitiligo, diffuse yellow impregnation in normal pigmented areas A circumscribed form of melanin pigmentation is visible in the mucous membranes in Addison's disease bronzing in hemochromatosis diabetes mellitus and pallor in anemia The skin may be flushed florid, ruddy rarely gray or cyanotic in erythremia or alabaster or lardaceous suggesting morphea or scleroderma Subdermal *infiltration is present in myxedema*

Purpura ecchymoses subcutaneous and joint hemorrhages occur in scurvy and hemophilia

Hair—Quality coarse or fine Generalized disseminated or universal localized or regional hypertrichosis or hypotrichosis Falling out or alopecia may be marginal as in hypothyroidism on the vertex in hypopituitarism Eyebrows thinning at outer or temporal edges and eyelashes falling out occur in myxedema Overgrowth of eyebrows meeting at root of nose suggests dyspituitarism Beard and moustache may be absent in males in hypopituitarism or hypogonadism and present in females of excess facial hair as hirsutism or virilism of adrenal cortex or ovarian tumor Hypotrichosis sparse and soft hair on the scalp and lanugo or body hair is present in hypogonads eunuchs and thymicolymphatics Hypertrichosis with coarse long lanugo or body hair and scalp hair occur in hypopituitarism and acromegaly General or universal hypotrichosis of lanugo or body hair suggests hypothyroidism or **pluriglandular deficiency**

Nails—Transverse ridges determine onset of nutritional disturbances Spoon nails occur in hyperthyroidism

Glandular system look for lymphadenitis as in status lymphaticus and thymoma in myasthenia gravis or Cushing s Syndrome

Vascular system look for evidences of hypoplasia of aorta and peripheral arteries

P E Systematic Physical Examination in Metabolic Endocrine and Hematologic Disorders —

Head—Skull size normal large (macrocephaly as in osteitis) or small (microcephaly) in a steeple dome or Turmschädel *Prominent* frontal and parietal bosses the square head of rickets and congenital syphilis Has there been any recent change in hat size? Enlargement occurs in Paget s bone disease leontiasis ossium and acromegaly Oxycephaly presents a flat skull open fontanels with shallow orbits and exophthalmos *Hydrocephalus* hemiatrophy and hemihypertrophy do not indicate endocrine disorders but are stigmata of deviation

Eyes—Note exophthalmos degree measure on either side with Hertel s exophthalmometer or estimate to the plane of

the zygoma and superciliary ridge Staring expression with Dalrymple's sign, protrusion of eyeball, and retraction of lids, Stellwag's sign of wide palpebral fissures, due to spasm of the levator palpebrae superioris, von Graefe's lagophthalmos, in which the upper eyelid lags or descends in jerks, on looking down the superior sclera becoming visible Joffroy's sign is absence of wrinkling of the forehead on looking upward Mobius' sign is inability to converge on near objects These are all associated signs of exophthalmic goiter due to bilateral proptosis and muscle spasm

Test for hemianopsia, by rough comparison of the visual fields of the patient with those of the examiner Test diplopia, amblyopia, and amaurosis Note enophthalmos or sunken eyes, pupillary reactions, extraocular movement and *nystagmus, icterus or blueness of sclera* dark circles, and xanthelasma of the orbicularis oculi In the ophthalmoscopic examination, optic discs and retinal vessels are pale in *anemia, engorged in leucemia and erythremia and in lipemia* of severe diabetes or myxedema or lipoid metabolism disorders Blue sclerae suggest hyperparathyroidism

EARS —Note presence of tophi in gout, blue cartilage in ochronosis, and deafness in hyperparathyroidism

NOSE AND CHIN —Nose bluntness suggests adrenal cortical disease, large mandible or whopper jaw prognathism suggest acromegaly Agnathism suggests eunuchoidism

MOUTH —Note lips as to thickness teeth as to size and placement as separated incisors are commonly found in hyperpituitarism Ptyalism or sialorrhea may occur Tongue shows macroglossia in cretinism Mucous membrane has melanin pigmentation spots that suggest Addison's disease

NECK —Note goiter, whether simple diffuse or parenchymatous colloid nodular, or adenomatous Palpate **thyroid gland,** isthmus and lobes determine degree of enlargement whether symmetrical or asymmetrical smooth or irregular with nodules localized at the poles in the isthmus **Consistency** cystic in colloid disease boggy and soft in hyperplasia, parenchymatous stony hard in malignant dis

ease Cervical adenitis occurs in mononucleosis, lymphatic leukemia Hodgkin s lymphosarcoma and metastatic cancer

Vascularity External displacement and congestion of superficial neck veins is often present with a colloid goiter Internal and diffuse pulsation thrill and murmurs or bruits are present in parenchymatous goiters The gland should be looked for Measurement of neck at a fixed level should be made at the thyroid cartilage angle or at the cricoid ring

Percussion for substernal dullness due to passage of en larged thyroid gland behind the sternum and for per sistence or enlargement of the thymus should be carried out Mediastinal adenitis is revealed only by roentgenograms

Parathyroid glands may be palpably enlarged in the presence of cystic bone tumors in von Recklinghausen s os teitis fibrosa cystica

THORAX.—Retromanubrial thyroid or thymus dullness should be studied Roentgenograms and fluoroscopic stud ies are necessary to establish such facts Evidences of heart disease possibly secondary to goiter must be carefully in vestigated A buffalo type of obesity suggests pituitary basophilism

The lungs may be overventilated in the Kussmaul breath ing or acidosis of diabetes mellitus Unusual pulmonary hyperresonance tympany is present in severe *anemia es pecially* of the chronic macrocytic primary type

ABDOMEN —The pancreas is rarely palpable and if it is the cystic or stony consistency should be *noted* Superficial veins may be engorged Occasionally a large fatty liver is present in anemia or with a large spleen in hemolytic jaun dice A pot belly with purple striae suggests *Cushing s syn* drome

LIVER —Note tenderness degree of enlargement charac ter of edge whether smooth irregular *firm or soft* Note re action to Murphy s maneuver palpate for cystic enlargement of sudden malignant obstruction of the common duct apply Courvoisier s law A small gall bladder is present in obstruc

tion of cholelithiasis Von Gierke's glycogenosis and Niemann Pick's disease show hepatomegaly

SPLEEN—Note size, position, consistency with or without concomitant liver enlargement in Gaucher's or with ascites in Banti's or Pick's syndrome Portal hypertension and thrombosis of splenic vein as well as familial jaundice cause splenomegaly as do erythremia, of Vaquez or Ayerza, or lymphoid or myeloid leucemia Anemia, primary pernicious mononucleosis and leucemia show splenic enlargement

GENITALIA—Note absence or *presence of secondary* sexual characteristics Aplasia hypoplasia, or hyperplasia Eunuchs may be primary infantile and idiopathic in type or the result of early castration or those with undescended gonads and atrophy Hypogonadism dystrophy, adiposogenitalis of Frohlich's syndrome suggest a hypothalamic lesion There may be nanism true or pseudo hermaphrodism Precocious development or macrogenitosomia occurs in pinealism in pre adolescent suprarenal cortex hyperplasia tumor or hypergonadism

EXTREMITIES—Note tremor, where fine and regular as in toxic goiter Note long, spider arms and thin hairy legs and hypertension in adrenal cortical tumor or Cushing's syndrome

Note size and shape of hands and feet, record size of glove and shoes 'Eunuchoid ' en longe" extremely long at least one third greater than normal Slender but normal proportionate pointed shapely artistic hands or feet with dorsal padding occur in preadolescent hyperpituitarism Spade hand, enlarged broad wrist broad and clubbed fingers with infiltration of soft tissues over bones and stubby feet, usually indicate postadolescent hyperpituitarism or acromegalic gigantism The so called ' en petite hands, at least one third shorter than normal short fragile tapering fingers narrow wrists flat feet and low arches suggest hypopituitarism Genu valgum suggests hypopituitarism while genu varum suggests hyperpituitarism

Xanthomas in the skin folds about and over the joints suggest the presence of a lipoid dystrophy Spontaneous fractures occur repeatedly in von Recklinghausen's osteitis fibrosa cystica of hyperparathyroidism

Deep tendon reflexes are disturbed in the presence of spinal cord changes of pernicious anemia Hyperesthesia paresthesia tingling pruritus numbness as well as decreased vibratory sense occur in pernicious anemia Tone conducted vibratory sense is lost in primary anemia

Laboratory Examinations in Metabolic, Endocrine and Hematologic Cases

Routine *urinalysis* may reveal much evidence as increased specific gravity and positive tests for **sugar** diacetic acid phenols or hemoglobin derivatives **Albumin or products** of bizarre abnormal metabolism as porphyrins melanins pentoses fructosis alkaptans in ochronosis amino acids tyrosine leucine cystine etc Some of these may be recognized microscopically in the urine sediment **Urobilinogen** in fresh normal urine should give a positive Ehrlich's benzaldehyde reaction in dilutions of 1 to 10 up to 1 to 20 Bilirubin gives a green color reaction with Harrison's strips impregnated with barium chloride after *treatment* with Fouchet's reagent (ferric chloride in trichloroacetic acid)

The *feces* may show evidences of pancreatic insufficiency in excess or preponderance of neutral fat and much undigested meat and starch In watery or diarrheal stools neutral fat and meat fibers are not so significant The **urobilin** content should be determined by Schlesinger's zinc chloride fluorescence and **hydrobilirubin** by Schmidt's S S $HgCl_2$ solution which gives a pink to red reaction

Blood Studies yield significant diagnostic data in microchemical analysis in metabolic *diseases* Blood sugar levels in milligram per cent *CO combining* power in volumes per cent cholesterol and total fat content nonprotein nitrogen totals and urea levels, in milligrams per cent Calcium

and phosphorus and phosphatase content will reveal the presence and degree of metabolic disturbance

Urine and blood amylase by Somogyi's method and lipase by Cherry Crandal method are elevated within a few hours and highest in the first 24 hours after acute edematous necrotic pancreatitis The lipase increase persists and occurs in higher concentration in carcinoma of the pancreas In the latter the sodium bicarbonate secretion following secretin or mecholyl injection is diminished

In Addison s disease, ACTH, 25 mg I M, fails to cause the normal 50 per cent drop in eosinophile count or rise in uric acid excretion

Blood studies as **hemoglobin** and **volume of packed red cell** determinations, counts of erythrocytes, reticulocytes, and leucocytes and differential counts of stained smears yield the important data From these may be calculated the various blood cell indices, as the color index, volume index, *mean corpuscular volume, mean corpuscular hemoglobin* and mean corpuscular hemoglobin concentration These indicate the type of anemia present whether macrocytic, normocytic, or microcytic and also whether hyperchromic normochromic or hypochromic

The morphologic study will reveal any abnormal leucocytes such as are present in leucemia of various types, actual or relative lymphocytosis granulocytopenia, or thrombocytopenia Prothrombin time tests should be done in hemorrhagic cases In jaundiced patients, urinary and fecal urobilinogen urobilin hydrobilirubin, blood icterus index, and cephalin flocculation bilirubin clearance bromsulphalein, van den Bergh tests, and the erythrocyte fragility test may yield valuable information Basal metabolic rate determination *and roentgenologic studies are necessary for complete* clinical survey of metabolic endocrine or hematologic cases

The test for heterophylic sheep cell antibody (Paul and Bunnell) is positive in 80 per cent of cases of acute infectious mononucleosis

III SEMIOLOGY IN ALLERGIC CONDITIONS*

The common clinical pictures that are generally recognized as allergies such as bronchial asthma, hay fever, vasomotor rhinitis serum reactions urticaria certain eczemas and purpura and gastrointestinal disorders mucous colitis and migraine cases have been clearly defined and established Patients rarely present only one single manifestation of allergy to one single allergen There are however, a good many other syndromes that are considered but not proved to be of the same origin Pleomorphic protean and often bizarre manifestations may be the result of combinations of allergies and make very broad the field of the symptomatology of allergic conditions

C C in Allergic Diseases—Record the predominating symptoms as sneezing stuffiness or stopping of the nose itching or burning of the eyes periodic headache skin rashes or hives swelling or inflammation of the mucous membranes mouth or of the joints Cough wheezing shortness of breath expectoration abdominal cramps nausea vomiting and diarrhea are common complaints while visual disturbances neuritis and palsy occasionally occur

P I in Allergic Conditions—Painstaking detailed inquiry and observation are necessary to establish the presence or absence of a foreground and a background for allergy Get the details of attacks possible precipitating factors get accurately the predominating first symptom of the first minor and major episode The circumstances surrounding and the exact dates of the onset and season of development time of day and duration as to hours, days months and recurrences of the clinical manifestations are most important

Note the frequency of recurrence as daily nightly weekly, bimonthly seasonally continuously constantly or intermit

* *Practice of Allergy* by Warren T Vaughan *Synopsis of Allergy* by Harry L Alexander and the outline by Oscar Swineford Jr and W M Wea r in Ann Int Med, 20 293 1944 have been consulted as reference works.

tently and the **duration** The frank clear cut types of atopy as hay fever with sneezing, stuffy or running nose, conjunctivitis and associated symptoms, may be developed by exposure to pollens, particularly of ragweed in late summer and autumn, or of house dust and of mountain cedar in the winter, or of palm or of trees or of grasses in the spring Note severity, means of relief periods of freedom, associated manifestations complications, and effect of change of environment

In order to rule out the presence of a common cold" it is necessary to establish the presence of pollen to which the patient is sensitive Vasomotor rhinitis is a nasal disorder present in certain environments and upon exposure to certain conditions or substances The effect of change of residence and of occupation or of exposure to domestic animals or pets is to be recorded

The cough of bronchitis the wheezing of cardiac asthma, and the dermatitis of fungus eczema are difficult to differentiate without the careful alignment of all the facts The exact time and the surroundings at the time of onset and offset of an attack may give the clue to the offender

When symptoms appear daily it is quite likely that something in the immediate environment in the food usually eaten in the air breathed at home or at work is the etiologic factor

If the attacks occur only at home with relatives domestic *psychic irritation or shocks the family or in laws may be of* some importance The environmental history must be exhaustive There may be sources of specific allergins in any surroundings If symptoms come on only at night on going to bed the bedroom where the patient spends one third of his life must be completely investigated

Survey of Possible Allergins

Physical conditions are frequently recognized as precipitating factors and sometimes as primary etiologic factors This is particularly true of cold chilling overheating, ex

ercise and inactivity heat radiant energy, sunshine mercury quartz carbon arc radiation and snow reflection pressure and tension wet feet, drafts dampness and dryness Most allergic patients are responsive to physical conditions as exhaustion and emotional states as excitement worry resentment and general nervousness Direct questioning on each of these factors should be carried out

Injectants—Arsenicals and antibiotics may cause skin lesions or hepatitis Serum sickness hypersensitivity to novocain ephedrin and adrenalin may be occasionally encountered as *primary* allergins with or without *secondary* factors

Bites from ants mosquitoes or bees may produce severe reaction or even anaphylactic shock in rare instances

Direct **contact** dermatitis vesiculation or urticaria may result from substances irritant to sensitized individuals as poison ivy or oak grasses juice of fig tree vine, ar primrose garden or house flowers wild flowers or weed Sprays disinfectants paints floor waxes or polishes soaps washing powder salves mascara hair dyes cosmetics creams rouge lipstick wave sets lotions vegetables fruits silk and coloring matters may be responsible Common colds and infection may be factors

Inhalants that commonly produce respiratory disorders should be reviewed in direct questions so designed as to determine troublesome inhalants with which patients are frequently in contact and identified as symptom producing substance Adapt questions to patient s environment and occupation At the same time it is to be remembered that many allergens are harmless to the given patient

Animal emanations are inhaled during the feeding of chickens driving behind or riding currying or clipping of horses shearing of sheep milking of cows stroking of a pet cat or dog wearing of goat or mohair cloth or rabbit felt or cow hair in hats or furs of wild animals Overstuffed or specially prepared furniture a certain sofa chair rug drape or bed or room may bring on trouble Symptoms that appear on entering a long shut up musty room dark un

ventilated closet, a cellar or any room after rainy spells or on gardening with compost are usually the result of allergy toward air borne molds

Inquire as to whether contact with feather pillows, or chickens, or birds, causes sneezing, stuffy, or running nose itching burning eyes, cough, wheezing, or asthmatic shortness of breath Shaking or turning woolen blankets or a horsehair mattress or rabbit felt mats or passing a household pet, cat or dog, may give rise to enough animal emanations to cause the cardinal symptoms

Exposure to house dusts or to that blown from the street or road, from the haystack, feed bin, granary, or fertilizer spreader, dust and lint from the bakery or tailor's shop, the textile mill, on trains or busses may inaugurate an attack

Chemical fumes or sprays of chlorine pyrethrum, insecticides disinfectants or heavy perfumes **smoke** from trains, oil or coal burners, Diesel oil or gasoline exhaust, burning grease or tobacco, **cosmetics** as light fluffy dusting **powder**, face powder, orris root, soap powder, shampoo mixtures, or wheat flour may be incriminated Pollens of ragweeds marsh elder, cocl lebur goldenrod, grasses, corn tassels, tree or palm buds, wild flowers garden flowers, roses, or marigold are common allergens Exposures occur during pleasure riding or picknicking in the country during the specific season, or in harvesting cutting or arranging flowers

Ingestants —Food and drug idiosyncrasies are occasionally recognized by the patient sometimes only as dislikes or fancies A food diary should be kept Every food in the dietary of the individual must be inquired into as a cause of cardinal gastrointestinal allergy symptoms as distention, cankers, nausea, vomiting belching gas, borborygmus colic, cramps, constipation diarrhea, mucus in stools or hives, or coryza Diet investigation is time consuming but most important The information must be obtained by close questioning, mentioning common food and symptom relationships, and considering altitude weather and temperature

The common foods that cause allergic manifestations are milk, wheat eggs, beef, fish, shellfish, tomatoes chocolate potatoes eggplant garlic asparagus mushrooms olives peanuts pork, fowl lamb coffee, tea bananas, grapes, raisins pineapple apple pears strawberries blackberries raspberries citrus fruits peaches plums prunes apricots cherries almonds other nuts figs mulberries beans peas carrots parsnips celery beets spinach chard lettuce arti chokes oyster plant squash cucumber cabbage kale Brussel sprouts cauliflower turnips watercress radishes corn oats barley rye rice spices cheeses

Drug idiosyncrasy as iodide sensitivity, results in saliva tion and swelling, or furunculosis quinine and salicylate in rashes amidopyrine cinchophen arsenic and thiouracil may cause liver damage angioneurotic edema and agranulocytic angina Opiates often cause nausea vomiting or urticaria and many drugs including phenolphthalein barbiturates and sulfonamides may cause rash and fever

Per H in Allergic Diseases —In these conditions I I environmental conditions may be most important as empha sized under P I Injurious habits extreme likes and dislikes of foods or beverages and excessive intakes are significant Cosmetics or drugs used may be the important factors In allerginated surroundings as stables gardens fields woods and in homes or under unhygienic conditions in factory shop or office where long hours are spent sensitizations develop Occupational contacts as those of a miller or a baker rancher or farmer may bring on an attack in sen sitized individuals Domestic incompatibilities often con tribute

P H in Allergic Conditions —This information is quite im portant as allergies begin in early life Inquire as to in fantile eczema rashes hives or urticaria frequent head colds sinusitis rhinitis hay fever asthma chronic headache mi graine indigestion dyspepsia cramps vomiting colitis diar rhea or constipation and acute food upsets often called ptomaine poisoning A history of previously having

ventilated closet, a cellar or any room after rainy spells or on gardening with compost are usually the result of allergy toward air borne molds

Inquire as to whether contact with feather pillows, or chickens, or birds, causes sneezing, stuffy, or running nose, itching burning eyes, cough, wheezing, or asthmatic short ness of breath Shaking or turning woolen blankets or a horsehair mattress or rabbit felt mats or passing a house hold pet, cat or dog, may give rise to enough animal emana tions to cause the cardinal symptoms

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Chemical fumes or sprays of chlorine pyrethrum, insecti cides, disinfectants or heavy perfumes, smoke from trains, oil or coal burners, Diesel oil or gasoline exhaust, burning grease or tobacco, cosmetics as light fluffy dusting powder, face powder, orris root, soap powder, shampoo mixtures or wheat flour may be incriminated Pollens of ragweeds marsh elder cocklebur, goldenrod, grasses corn tassels tree or palm buds, wild flowers garden flowers, roses, or mari gold are common allergens Exposures occur during pleas ure riding or picnicking in the country during the specific season, or in harvesting cutting or arranging flowers

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sillar crypts pseudomembranes, ulcers or abscesses, or scar over the surface of the tonsils sealing the crypts. The odor of the breath should be noticed The tongue may be coated papules may be present So-called canker sores or aphthous stomatitis lesions are commonly found in gastrointestinal allergy

The neck in rare cases may be stiff due to an allergic meningismus with positive Brudzinski and Kernig signs Ludwig s angina and cellulitis in the neck may be in part due to sensitization as well as to streptococcic infection Salivation and enlargement of the parotid is common in individuals hypersensitive or supersensitive to potassium iodide Lymph nodes of the cervical chain should be studied for enlargement consistency matting together skin adherence and tenderness The thyroid gland is usually not affected

The skin and mucous membranes are likely to show striking changes in allergic conditions There may be various types of rashes as macules papules vesicles blebs bullae or dermagraphism There may be conduction disturbances of the partial heart block types but these are uncommon and very rare The valvulitis of acute rheumatic fever may be an allergic manifestation The characteristic exudative acute rheumatic process seems to occur in the synovial mucous membranes The proliferative process follows in the heart valves but less conspicuously in other parts

The heart is under some stress in some but not in all chronic cases of asthma in which there is considerable emphysema Chronic cor pulmonale is difficult to establish Acute carditis has been found in patients with serum sickness There have been demonstrated angiitis arteriolitis arteriti and periarteritis of the smaller peripheral and even the coronary arteries G Werley has found many instances in which food allergy apparently contributed to coronary vasospasm and insufficiency enough to produce the clinical picture of angina pectoris

The abdomen on examination may show conspicuous abdominal breathing Gastrointestinal allergies give rise to

taken toxoid or antiserum, most of which are of horse origin, must be recorded Serum sickness occurs often after tetanus antitoxin

F H in *Allergic Conditions*—Hereditary tendency is great Atopy is transmitted as dominant Mendelian characteristic If allergy is present in both parents about 75 per cent to 100 per cent of the offspring suffer If one parent or grand parent was allergic, 50 to 75 per cent of the offspring and if only an aunt or uncle was allergic 10 to 25 per cent may be affected Therefore, inquiries should be directed to the presence of allergic conditions in all the forebears and collaterals as well as in the siblings

Physical Examination in Allergic Patients

P E in Allergic Conditions—Complete routine physical examination is in order, as previously stated in all cases Some allergists like some dermatologists have a tendency to confine their physical examination to general observation and to reactions to various agents and tests Routine examinations are quite important in most individuals with allergic disorders, as other pathologic conditions may have developed

The **allergic facies** is characteristically flat due to depression of the malar prominences from underdevelopment of the antra or sinuses and the herring mouth The adenoid facies with overriding incisors and high peaked hard palate or gothic arch is quite similar Swelling of the mucous membranes in angioneurotic edema of the eyes or the lips is conspicuous The eyelid may be puffy swollen and red or injected Vision may be only rarely involved and the internal structures of the eyes usually escape damage or disturbance

The nasal passage and mucosa should be carefully examined for allergic rhinitis A thin mucopurulent secretion due to secondary inflammation of Waldeyer s ring containing many eosinophiles is characteristic Edema obstructs the orifices of the sinuses The nasopharynx is inspected for injection postnasal drip adenoid tissue hypertrophy affection of the tonsils cheesy masses in ton

IV SEMIOLOGY IN CASES OF NUTRITIONAL DEFICIENCY DISEASES*

Deficiency diseases in early stages are difficult of recognition not only in infants and children but also in adolescents and adults The proof that such are present is even more difficult to establish In advanced stages of the *common* avitaminoses definite clinical pictures are *presented* Deficiencies of single vitamin factors are rare Usually the signs of one or two deficiencies predominate although nearly always there are multiple deficiencies Other important food factors besides vitamins that may be missing in a given unusual dietary are minerals cert in essential amino acids proteins and possibly fatty acids Scurvy represents an insufficiency of vitamin C or *ascorbic acid* when growth is *rapid* *Pellagra* is for the most part a deficiency of vitamin B_2 particularly nicotinic acid or niacin Beriberi is a deficiency of vitamin B_1 or thiamin Gooseflesh keratosis xerosis follicular conjunctivitis and night blindness indicate avitaminosis A (See Appendix for Syndromes)

CC in Diseases of Nutrition —General weakness chronic fatigue loss of strength failure of the appetite painful bleeding gums sore lips sore mouth sore tongue diarrhea chronic nervousness irritability loss of ability to accomplish mental concentration memory loss apathy uncertainty fear ringing in the ears dizziness lethargy headache confusion insomnia pain in the eyes photophobia night blindness loss of manual dexterity pain in the legs paresthesias dermatitis of symmetrical parts with or without exposure to the sun may be symptoms

PI in Avitaminosis or Deficiency Diseases —**Anorexia** in children is an early symptom of deficiency Further refusal to eat adequate amounts of food creates a vicious circle The failure to gain in body weight and flattened growth curves usual in these cases should be investigated

* Consult as a reference text Dr John B Youmans *Nutritional Deficiencies*

a good many symptoms but relatively few signs There may be pylorospasm, distention, belching, tenderness, soreness pain in the epigastrium and in the right upper quadrant, rarely on the left, but frequently in the lower abdomen A palpable sigmoid colon and descending spasms of the so called "irritable gut" are commonly found Pseudocyesis may be seen in rare cases Genital anal, and bladder irritations Dietl's crises, dermatitis and gout may be due to allergic changes

Extremities may show skin lesions and some cases of Raynaud s disease may well be due to physical allergy Thromboangiitis obliterans periarteritis nodosa lupus erythematosus, and peripheral vascular disease may be due in a measure to allergic conditions Studies of the peripheral pulses skin temperatures blood pressures, and oscillometric indices may reveal the evidences of functional or organic obstruction in the peripheral arteries

Laboratory Examinations in Allergic Cases

Laboratory studies of **nasal secretion** and sputum may reveal eosinophiles which would indicate allergic reactions and gelatinous mucoid particles or Laennec's pearls

Blood hemoglobin determination and red blood cell count and observation of the total white blood cell count and the number of eosinophiles under basal conditions

Leucocytosis after the ingestion of a suspected food may be considered a positive leucocytic index which is Warren Vaughan s adaptation and reinterpretation of the hemoclastic crises of Widal

Urine examination may reveal allergic albuminuria or hematuria Feces examination for mucus and eosinophiles may be positive in mucous colitis

Skin tests by scratch, patch or intradermal technique with atopens or allergins may give significant information Passive transfer mucosal tests nasal tests or the ophthalmic test sometimes gives very illuminating results

F H in Deficiency Diseases—Certain races are known to require less vitamins as a result of generations of inadequate diet Certain families likewise may tolerate greater degrees of deficiency longer and better than members of other families A history of repeated familial gastrointestinal disorders of various types and of extreme want and deprivation of the individual is important Abuse of alcoholic beverages in one or more other members of the family is very significant and should be recorded

Physical Examination in Nutritional Disorders

P E in Patients With Vitamin Deficiency Diseases—General appearance of the patient with avitaminosis is usually that of a patient with a serious chronic depleting or debilitating disease presenting significant pallor

SKIN is abnormal usually dry tight rough *pebbled* pigmented waxy with an excess of blackheads and whiteheads about the nose and angles of the mouth The absence of subcutaneous fat loss of elasticity and wrinkling on stroking are significant Symmetric dermatitis over the exposed parts producing Casal s collar about the neck sharply demarcated acute inflammation vesicles and bullae ulcerations and exfoliation on the backs of the hands and insteps of the feet *lichen ruber planus* pigmentation follicular hyperkeratosis and roughening of the extensor surfaces of the extremities are most important The presence of muscular hypotonus often results in inability to stand or to sit up and poor posture due to quadriceps weakness

The eyes may show photophobia blephantis nyctotyphlosis or nyctalopia xerosis thickened conjunctiva Bitot s spots softening of the cornea or keratomalacia These findings call for the demonstration of a lack of rapid visual adaptation as tested by the biophotometer and are then diagnostic of A deficiency Limbic corneal vascularization and canthal excoriation are evidences of B deficiency Papillary edema and retinal hemorrhages occur late in B deficiency

Determine whether there was a **developmental retardation** in cutting of teeth, talking, sitting up, standing up, or walking Note any history of aversion to normal play, in activity, loss of alertness increased irritability, or mental depression

Visual disturbances at night suggest vitamin A deficiency Edema of optic nerve heads suggests vitamin B_1 or thiamin insufficiency Man, unable to synthesize thiamin, develops the clinical picture of beriberi when exposed to B_1 avitaminosis

The total **intake of food** as well as the **proportions** of carbohydrate, protein, and fat and the biologic character or quality of the foodstuffs must be painstakingly established in detail particularly *in borderline cases*

Exposure to the elements, undue **physical exertion, fever, hyperthyroidism,** and **pregnancy** and lactation may exhaust vitamin stores and precipitate symptoms

Chronic inadequate improper **dietary habits,** poverty, ignorance, inadequate digestion and poor absorption assimilation or utilization contribute to the depletion of vitamin stores

Per H Alcoholism, anorexia nervosa food **fancies** or **fads,** dieting with the exclusion of fresh meats fowl, and fish, fats butter and cream whole grain cereals fresh vegetables and fruits should be thoroughly investigated

P H in Deficiency Diseases—Poor economic and educational opportunities might result in inadequate dietaries during infancy, childhood, adolescence or adult life long imprisonment or expeditions or sea voyages to distant countries might be significant Chronic debilitating disease chronic hepatic congestion and neuropsychiatric states chronic alcoholic excesses would tend to aggravate chronic digestive disturbances Peptic ulcer achylia gastrica, **chronic dyspepsia, gastrointestinal disorders,** ulcerative colitis, any diarrhea with consequent decreased absorption must be considered contributory factors

The **abdominal** examination yields no characteristic changes in avitaminosis but the genitals often do

Excoriations of the vulva and anus may also be present in niacin or nicotinic acid deficiency Avitaminosis B or chronic pellagra may show stupor and dementia

Avitaminosis E may present habitual abortion and possibly amyotrophic lateral sclerosis

The **extremities** reveal in vitamin B_1 deficiency persistent muscular tenderness hyperesthesia weakness myotonia peripheral neuritis paresthesias wrist drop ankle drop prostration and neurasthenia The extremities may present the symmetrical extensor surface dermatitis of nicotinosis or dry scaly crinkly alligator skin asteatosis of A deficiency

B or pyridoxine deficiency may show pseudohypertrophic muscular dystrophy and Parkinsonian palsy In vitamin B_4 deficiency there is besides myotonia loss of reflexes and diminution or loss of vibratory sense Bowed legs and enlarged joints result from old D deficiency or rickets

Capillary fragility and permeability are increased in C and E deficiency Avitaminosis K will cause petechial and postoperative hemorrhage from the wound Jaundice contributes to vitamin K deficiency

Dicumarol oligoprothrombinemia may be corrected by intravenous vitamin K 1 oxide

Laboratory Examination in Nutritional Diseases

Urine studies routinely reveal few if any abnormalities Each vitamin must be recovered from the urine by a special extraction method *Excretion* of thiamin or vitamin B_1 riboflavin or B pyridoxine or B_6 and vitamin C or ascorbic acid may be quantitated in the *urine* Blood ascorbic acid and phosphatase determinations should be done when indicated

Blood studies hemoglobin and red blood cell count are usually low while the white blood cells are increased usually due to intercurrent infe*ction* Prothrombin time may be determined by modified Quick s *method* It is definitely pro

Nose and mouth changes consist in fine, scaly, greasy desquamation in nasolabial folds on alae nasi and ears, fissures on either side of the nasal septum, dyssebacia ulcerations at angles of the mouth and lips, magenta tongue, cheilitis in riboflavin B deficiency.

Retracted spongy **gums** that bleed easily, gingivitis, bleeding mucous membranes, petechial hemorrhages and pallor in fretful children spell vitamin C deficiency. Purpuric spots occur in vitamin D deficiency with excessive dental caries. The **teeth** may be malformed and delayed in eruption in absence of vitamins A and D. Pyorrhea and trench mouth are common in vitamin deficiencies.

The **tongue** may present important diagnostic findings. It may be white strawberry, red strawberry, raspberry, rare beefsteak like, scarlet red, or purplish red magenta color. It may be pebbled, deeply wrinkled, furrowed, geographic, hairy or furry. A coated tongue appears in patients with the high fever of specific exanthemas. In pellagra the tongue is first swollen and later injected on the anterior and lateral margins with dental indentations producing a typical beef red aniacinosis tongue. It undergoes changes fairly rapidly with ulceration, salivation, pain and tenderness and changes later to a dry smooth atrophic tongue. The ariboflavinosis B tongue is magenta color, granular, pebbled due to swollen epithelium, flat filiform papillae and does not atrophy rapidly.

The **thoracic cage** may show flaring borders, beaded ribs, depressed sternum, Harrison's groove, which with bulging forehead, soft square head, delayed closure of fontanelles, slowly erupted teeth, spasmophilia, a pot belly with enlarged wrists, elbows and bowed legs are residua of rickets suggesting vitamin D deficiency.

Cardiovascular signs, as tachycardia, occasionally arrhythmia, cardiac enlargement, distant heart sounds, gallop rhythm, electrocardiographic abnormalities, liver congestion, ascites, edema, along with neuritic signs may be due to an athiaminosis or deficiency of vitamin B_1. Blood pressure is low.

V SEMIOLOGY IN DISEASES OF THE LUNGS

C C in Pulmonary Cases—Cough expectoration rusty sputum or hemoptysis pain in the chest fever chills immediately suggest bronchopulmonary infectious disease

Prodromal sore throat and stuffiness in the head may be followed by the substernal pain of tracheitis and the increased shallow breathing of acute bronchitis or dyspnea of virus or pyogenic pneumonia or croup stridor may follow

Extreme tightness and wheezing may occur at night or in early morning after exertion or exposure to an allergin

Hoarseness dyspnea aphonia, anorexia noctidrosis emaciation asthenia and pallor may be associated and such significant symptoms must be taken into account

P I in Pulmonary Cases—Note especially date of onset Inquire concerning details of precipitating factors of symptoms **Cough** whether dry or moist time of occurrence frequency provoking cause and type of **expectoration** blood spitting (hemoptysis) Hoarseness screeching or brassy or clanging voice dysphonia or aphonia **Fever chills** (rigors) **night sweats** (noctidrosis) Dyspnea or tightness and wheezing of asthmatic bronchitis come on in early morning and are relieved by expectoration Bronchial asthma comes on soon after exposure to pollens animal emanations or foods to which the patient is sensitized For details see Section III on Allergy **Pleural pain** character location radiation effect of breathing and immobilization restriction of breathing or dyspnea extent of loss of appetite (anorexia) loss of weight (emaciation) loss of strength (malaise asthenia weakness) loss of color (pallor) and status of menses (amenorrhea) Cyanosis of pulmonary origin indicates the presence of much pathology

Per H in Pulmonary Cases—Note exposure in daily occupation to dust grinding (coniosis) anthracosis (miners) siderosis (grinders) aluminosis (potters) silicosis (stone

longed in the blood in vitamin K deficiency Prothrombin time is shortened by vitamin K administration Blood calcium and phosphorus level changes may be detected in rickets Special mineral metabolism studies may be carried out

Feces in nutritional colitis may contain blood as well as mucus Deficiency diarrhea stools usually contain no specific or causative organisms

CHEST inspection may show abnormalities on the surface as to the amount and distribution of the hair and the presence of enlarged veins with reversed direction of blood flow. Note breasts and nipples position pigmentation lactation discharge serous sanguineous the presence of masses or tumors with fixation or adherence to skin or to deeper tissues

Size and Form of Thorax large or small shape, symmetry long narrow flat thin short broad thick or square. Measure circumference with cyrtometer at maximum expiration and inspiration. Specify type as barrel (emphysema) flat phthinoid pterygoid phthisical with retracted apices supra and infraclavicular spaces in inspiration (tuberculosis) bulging (empyema effusion) chronic cardiac enlargement aneurysms tumors) funnel pigeon and grooved (Harrison's) with the rachitic rosary scoliotic or kyphotic chest

Lungs —

INSPECTION Note *prominence* of intercostal spaces, levels supra and infraclavicular fossae retraction narrowing or fullness. Louis angle costal angle or epigastric angle. Follow movements of costal margins especially asymmetrical (Hoover's sign)

Note chest **expansion** respiratory **movements** ratio of inspiration to expiration slow rapid deep or shallow free or labored or lagging costal abdominal or costo abdominal. Analyze pathologic types as Cheyne Stokes Biot's or Kussmaul's breathing sighing tachypnea dyspnea paroxysmal or constant or orthopnea. Look for diaphragm phenomenon or **Litten's sign**. Determine vital capacity

PALPATION for symmetry of movements **friction rub** increased or decreased vocal or tactile **fremitus rhonchi** tenderness periostitis **muscular tenseness** or **atrophy** (Pottenger's signs) and tumor masses. Pressure over de Mussy's point at the end of the tenth rib on the line of the left sternal border is excruciatingly tender in diaphragmatic pleurisy

cutters), asbestosis (asbestos workers), and bagassosis (dry cane or celotex fabricators)

Irritating vapors, chemical fumes of any type, as gasoline motor car exhaust, coal tar, creosote or tobacco smoke exhausting or depressing occupations, poor living or working conditions as cold storage chilling may be contributory

State the frequency and extent of exposure to persons with cough tuberculosis pneumonia or plague Establish facts concerning personal predisposition or susceptibility to pulmonary disease

P H in Pulmonary Cases—Note especially a previous history of (1) enlarged glands (location duration, severity, suppuration scrofula) (2) bone or joint trouble (3) disease of other respiratory organs or accessories as nose sinuses, throat, larynx trachea bronchi mediastinum pleura diaphragm or the thoracic cage recent tonsillectomy pneumonia or injury (4) diseases of the heart arteries or blood

F H in Pulmonary Diseases—Investigate family histories of near relatives and collaterals (if clear and noteworthy) with reference to all possible diseases of the respiratory organs and especially to tuberculosis in various forms Note any familial tendency to protein sensitization hay fever asthma or urticaria

Physical Examination in Diseases of the Lung

P E Examine the whole respiratory tract in great detail Note the **voice**—character changes huskiness hoarseness weakness dysphonia aphonia **Cough,** brazen brassy clanging dry or productive preceded by associated with or followed by dyspnea Note sputum Do laryngoscopic examination **Neck gland** enlargements or abnormal vascular changes *are significant Deviation or tugging* of the larynx or trachea or abnormal **pulsations** in the suprasternal notch or over the upper chest should be looked for since aneurysm is a possible etiologic factor in certain types of pulmonary disease Horner's syndrome *occurs in apex* tumors

CHEST inspection may show abnormalities on the surface as to the amount and distribution of the hair and the presence of engorged veins with reversed direction of blood flow. Note breasts and nipples position pigmentation lactation discharge serous sanguineous the presence of masses or tumors with fixation or adherence to skin or to deeper tissues.

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PERCUSSION Note **resonance**, normal, vesicular, **hyper resonance, tympany,** or impaired **dullness to flatness** Compare symmetric parts as to volume pitch, duration quality Myoidema, sense of resistance and elasticity Measure height and width of **Kronig's isthmi** at apices, change in pitch or presence of Wintrich's sign Note abnormal or modified tympany metallic or cracked pot and coin sounds Percuss **heart borders** and **liver borders** anteriorly Determine extent of **excursion of lung bases posteriorly** (rib levels) before and after a deep inspiration Look for Traube's semilunar space, Grocco's triangle and Skoda's resonance

AUSCULTATION Note respiratory murmurs or **breath sounds,** both inspiratory and expiratory as to character and quality pitch, duration enfeeblement or increase in intensity Note **voice sounds,** increased decreased whispered and spoken normal vesicular bronchophony pectoriloquy or egophony Establish presence of normal vesicular or puerile breathing abnormal bronchovesicular roughened granular bronchial tubular or tracheal cavernous amphoric asthmatic cogwheel or striderous breath sounds

Note **adventitious sounds** as **rales, friction rub** metallic tinkle or succussion splash Note location character and type of rales, moist, **crepitant** consonating crepitus indux and redux of pneumonia and tuberculosis **subcrepitant** or crackling rales of bronchitis or edema **bubbling** or **gurgling,** liquid musical dry **sibilant** or **sonorous** rales Synonymous terms in other classifications as mucous fine medium coarse squeals and groans and rhonchi should be avoided Try effect of deep breathing position and pressure and of a single hacking cough effort after expiration

The HEART is usually of the drop ptotic or vertical type but may be transverse or horizontal Precordial activity is absent or minimal except in the presence of massive pulmonary embolism In such cases of acute cor pulmonale the action of the right ventricle and the pulmonary conus may be tumultuous and a friction rub may be heard over the

upper left precordium There is usually tachycardia and only occasionally gallop rhythm

The blood pressure is usually low and the peripheral arteries as a rule are normally soft and relaxed to full caliber

The ABDOMEN may be scaphoid or present normal contour enlargement or protuberance due to meteorism or bulging in the flanks due to the presence of ascites Visceroptosis gastroptosis or enteroptosis may present low or pot belly bulging

Palpation may reveal a characteristic doughy resistance of tuberculous peritonitis with or without matted adhesions The liver spleen or kidney may be palpable and tenderness may be elicited in any part or over any organ

Shifting dullness in the flanks on percussion and a fluid wave indicate peritoneal exudation or transudation On auscultation a friction rub may be heard over the spleen and in rare instances elsewhere over the abdomen

The rectum anus and genitals may show *chronic* fissures and occasionally chronic sinuses Pelvic peritonitis and subacute epididymitis may be secondary to pulmonary disease Cold abscesses may point in the inguinal or femoral ring regions

The BACK SPINE and EXTREMITIES may show healed Pott s disease or evidences of joint or epiphyseal tuberculosis Spondylitis with kyphosis and angulation of the ribs may produce the nonobstructive type of emphysema

The spine may be rigid and tenderness over the dorsal root ganglia may give a clue to arthritis as an explanation for radicular pain of intercostal neuritis Breast and lung tumors may metastasize to the spine and dumbbell involves both

The NERVOUS SYSTEM may be metastatically involved by pneumococcic influenza or tuberculous infection from the lungs producing meningitis or brain abscess

Paracentesis thoracis or thoracentesis is done as a diagnostic procedure whenever suggestive signs of free pleural fluid are present at the bases

Laryngoscopic examination of pharynx root of tongue and epiglottis should be done and in cases of hoarseness vocal cord, arytenoids posterior wall, and upper trachea visualized

Bronchoscopic examination is done immediately in all cases of foreign body aspiration and chronic cases of suspected bronchogenic carcinoma or lung abscess

Roentgenographic studies, stereofilms, and films after lipiodol insufflation are to be done whenever possible in cases of pulmonary disease

Laboratory Examinations in Pulmonary Diseases

Sputum is to be measured if there is any significant quantity expectorated Note **color** white, pink, red yellow, green, blood streaked bloody rusty or prune juice **Consistency** and **character** tenacious frothy watery mucous, mucopurulent, purulent, containing bronchial casts or showing tendency to layer formation **Odor** fruity, urinous foul or putrid *Microscopically* look for erythrocytes leucocytes mononuclear eosinophiles epithelial alveolar herz fehler cells or elastic tissue Laennec s pearls Curschmann s spirals Charcot Leyden crystals and mitotic cells after *Papanicolaou stain* Smears are to be stained for pneumococci streptococci staphylococci spirochetes fungi yeasts molds actinomyces *Coccidioides immitis* or tubercle bacilli with acid fast Ziehl Neelsen s carbolfuchsin

Pleural Fluids from exploratory aspirations are studied to determine as to whether there is exudation or transudation The color character specific gravity albumin and euglobulin content cell count and differential count should be determined Smears and cultures are to be made and examined for organisms

Blood Study hemoglobin concentration erythrocyte leucocyte and differential counts with particular reference to monocytes and eosinophiles Sedimentation rates and serologic studies should be done routinely

Gastric Contents or washings for swallowed sputum to be subjected particularly to acid fast staining

Purulent exudate from chronic abscesses or sinuses should be cultured and smears made and stained with carbol fuchsin

Urine is studied for albumin red blood cells, pus cells and the sediment for tubercle bacilli and in rare instances for ova

Feces should be studied for amebae or amebic cysts or ova of other parasites

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CARDIAC PAIN Get details Severity excruciating Duration Character sharp or dull choking constricting oppressing aching Location substernal or part of precordium Radiation time of onset extent and character in secondary area as sharp pain ache or tingling numbness in arm neck head or back or abdomen Associated symptoms sense of impending death angor animi cold sweat shock dyspnea consciousness of heartbeat abdominal symptoms crisis belching borborygmus or singultus

Precipitating factors May be little or much exertion excitement eating or exposure Note negative relationships Does pain come on at rest or during sleep at night? Is it relieved or made worse by change of position? Durations of attacks where no medication is given and after treatment Effect of rest nitroglycerin amyl nitrite aminophyllin whisky oxygen salicylates digitalis or morphine Persistence of soreness or weakness after the pain is relieved Note any difference in the character severity or location of the pain in various attacks

Per H in Cardiac Cases —Of etiologic importance are severe nervous shocks or emotional stresses sudden strains excessive athletics injurious habits high living overeating overdrinking of alcohol and excessive use of tobacco in susceptible individuals High tension big business worries heavy responsibilities long hours hard work hard play and all the strains of modern life are considered as factors in hypertension and cardiovascular disease

Unhappy marital relations domestic troubles financial stress and worries over children may contribute aggravating psychogenic factors Question moral life promiscuity chance of syphilitic infection and exposure to conditions conducive to rheumatic fever infection in early life as damp cold climates where there is much infection with streptococci

P H in Cardiac Cases —Inquire carefully as to rheumatic fever (inflammatory migratory rheumatism in childhood or early adolescence) chorea (St Vitus dance) subcutaneous nodules erythema growing pains recurrent tonsillitis (severe

VI SEMIOLOGY IN DISEASES OF THE HEART

C C in Cardiovascular Diseases —Weakness and fatigability are often the inaugural symptoms of circulatory insufficiency, shortness of breath or breathlessness (*dyspnea*), swelling about the ankles (*edema*), *pain*, substernal oppression, constriction tightness or choking (*angina*), and consciousness of heart action *(palpitation)* are considered cardinal symptoms Attacks of fainting or unconsciousness *(syncope)* without or with convulsions dizziness *(vertigo)*, light headedness *(giddiness)*, and headache, blushing, blanching, blueness *(cyanosis)*, blotching *(purpura)*, fever, chills, sweating, blood in *sputum* (*hemoptysis*) *or in urine* (*hematuria*), and paralysis (hemiplegia) may occur as primary or associated symptoms

P I in Cardiac Cases —Record the patient's conception of the **precipitating factors** and surrounding circumstances Note especially date of earliest symptoms of weakness, exhaustion, or the appearance of **dyspnea** on exertion or at rest whether constant or paroxysmal ' cardiac asthma'' and of inability to breathe lying down necessity for elevation with pillows during sleep (orthopnea) diurnally in paroxysms or nocturnally only Sighing respiration may be complained of and should be recorded Associated symptoms as cough expectoration, hemoptysis epistaxis cyanosis pallor flushing ' dropsy,' **edema** of dependent parts oliguria purpura fever chills abdominal pain nausea, vomiting and jaundice may develop Attacks of various types and causes may arise Inquire as to choking sensation substernal oppression pain, regular or irregular palpitation for rhythm of heart There may be extreme dyspnea wheezing cardiac asthma with or without pulmonary edema *Syncope* (rate of heartbeat) momentary and without, or prolonged and with convulsions Cerebral angiospasm episodes vertigo paralysis intermittent claudication, limping cramps in legs on walking or in bed at night are circulatory symptoms

Deviation or tugging movement of the larynx or trachea suggests aneurysm thrills and continuous murmurs suggest arteriovenous fistulae but a dilated jugular bulb may give confusing sounds

CHEST —Inspection may reveal significant abnormalities that embarrass heart action as the **barrel chest** of *emphysema* or the cobbler's **funnel** chest or trichterbrust or other rachitic deformity Asymmetry due to precordial bulging may be the result of cardiac enlargement during childhood Measure diameters expansion and vital capacity

Lungs Crepitant rales at the bases suggest pulmonary edema of left ventricular insufficiency origin Posterior pulmonary basal lagging dullness flatness with absent fremitus and distant breath sounds and rales and egophony indicate hydrothorax of congestive circulatory failure while dullness and bronchial breathing and rales with acute hemoptysis and icterus suggest pulmonary infarction

HEART —In cases with diseases of the circulatory apparatus go into the following studies in detail

Inspection—Visualize position of cardiac **apex impulse** interspace and distance from the midsternal line Note **precordial fullness** or bulging *or* **abnormal pulsation** in suprasternal notch subclavicular spaces or **retraction** Broadbent's signs posteriorly *retraction* in the tenth and eleventh left interspaces anteriorly or in the epigastrium suggest adherent pericardium but occur in cardiomegaly

Palpation —Note character of the strongest and most distinct part and extent or area of cardiac **apex impulse** whether weak forceful heaving diffuse localized or circumscribed Localize and time **shocks** palpable sounds first and second systolic or diastolic **thrills** palpable murmurs systolic or diastolic pericardial **friction** rubs and abnormal **expansile pulsations** Palpation of the back should not be neglected

Percussion—Percuss out **retromanubrial dullness** and relative and absolute **cardiac dullness** Compare note over up

attacks, quinsy, or septic sore throat), and as to other infectious diseases, such as **scarlet fever, diphtheria, influenza, pneumonia, typhoid** or **typhus fever** and **syphilis**. Note the history of **hypertension, diabetes mellitus, nephritis, goiter, gout, arthritis** or unusual trauma to chest. Excessively heavy work, excessive (competitive) athletics may have been contributory etiologic or precipitating factors.

F H in Cardiac Cases.—Note any **family tendencies** to circulatory diseases, **sudden deaths, rheumatic** manifestations, vulnerability of cardiovascular protoplasm as in premature **atherosclerosis, hypertension, apoplexy,** angina pectoris or **cardiac pain, dropsy,** myocardial insufficiency, or syphilitic vascular disease.

Physical Examination in Diseases of the Heart and Arteries

P E in Cardiac Cases.—May reveal **obesity** and general evidences suggestive of **premature ageing,** of a psychoneurotic or stolid mental make up, of local or general hormonic signs of endocrine disorders, as acromegaly or Cushing's syndrome.

The startled facies of **exophthalmic goiter** or pale puffiness of **myxedema, chronic nephritis** or **pernicious anemia** and the **pink pudginess** of chronic **diabetes mellitus** and the ruddy **floridity** of the hypertensive arteriosclerotic patient are significant. The **cyanotic high malar flush** and deep **ruby, roughened** lips of mitral stenosis and alternating flushing and pallor of aortic regurgitation are occasionally seen.

Head nodding and **neck** throbbing of the carotids of free aortic regurgitation are easily recognized. Extreme cyanosis as in morbus caeruleus or maladie bleue usually indicates major congenital venoarterial shunting or possibly cardiacus negros of chronic pulmonary sclerosis.

Engorgement of the neck veins and orthopnea indicate congestive circulatory failure. Jaundice suggests pulmonary infarction. Café au lait (coffee and milk) coloration with petechiae suggests subacute bacterial endocarditis.

sounds (replacing running up to or separated from heart sound by a distinct interval) duration (long short through part or all of the cardiac phase) transmission extent (none or wide) direction character (changed or unchanged) into axilla neck vessels to back to olecranon sacrum or abdomen Note effect on murmurs of respiration especially forced and held expiration

Examine in erect jackknife recumbent left lateral and right lateral positions with normal breathing and with holding of the breath after deep inspiration and expiration

Murmurs are classified as organic or functional endocardial or exocardial indirect regurgitant, due to incompetency or insufficiency of a valve or direct stenotic due to stenosis or narrowing of a valve orifice

Pulse palpation should be carried out in several accessible arteries and may reveal pathology in the arterial wall which normally is not palpable in diastole or changes in the circulation and the heart action or both The pulse may be rapid or slow in rate small and thready or full and bounding hard well or quick poorly sustained *uniform or alternating regular or irregular in rhythm*

The character of the pulse depends upon the rate the rhythm and pulse pressure *Tachycardia* produces a regular pulse rate over 100 *bradycardia* one under 60 per minute *sinus arrhythmia* gives rise to a phasic pulse waxing and waning with respiration *premature* contractions result in bigeminy or coupling of the pulse trigeminy quadrigeminy or irregular action *Heart block* usually causes true dropped beats or a rate below 40 *atrial flutter* a rapid regular pulse and *atrial fibrillation* an absolutely irregular pulse

A *high* pulse pressure gives rise to the quick poorly sustained water hammer dichrotic pulsus alter et celer of aortic regurgitation hyperthyroidism or fever A low pulse pressure produces the *slow* hard well sustained double humped anacrotic *or plateau* pulsus rarus parvus tardus bisteriens of aortic stenosis or extreme hypertension

per with that over lower sternum, normally the upper note is more resonant Record measurement of extent of dullness from midsternal line in second, right fourth, and left fifth in terspaces Determine acuteness of cardiac angle, and any shift of dullness with change of position from upright to reclining and from side to side Map out Traube's semi lunar space and extension of gastric tympany upward Per cussion of back and epigastrium may be worth while

Auscultation —Auscultate in each of the valvular areas at the apex and base along the right and left sides of the sternum, to the right and left of the ensiform, in the epi gastrium, in the neck, in the suprasternal notch and along the carotids in the left axilla and over the back Palpate the carotid pulse during auscultation for the purpose of accurate timing Count the heart rate (rapid slow) note effect of carotid sinus or ocular pressure and compare with the peripheral pulse

Note character of heart sounds, as clear muffled impure murmurish distant, indefinite diminished sharp pure snapping, accentuated reduplicated or alternating doubled or suggesting a presystolic or protodiastolic gallop, or em bryocardia with a tick tack quality Note the rhythm regular or irregular premature contractions with postec topic pauses coupling, absolute irregularity and the effect of increasing heart rate to 120 or 140 Note relative in tensity of second sounds at the base in the aortic and pul monic areas and at the apex in the mitral and tricuspid areas Note adventitious sounds, as to and fro leathery pericardial and pleural pericardial friction rubs

Note absence or presence of murmurs If murmurs are heard note primary location or valve area where best heard loudness gradation (1) very slight (2) slight, (3) moderate (4) loud (5) very loud (6) audible without application of chest piece character (blowing rumbling, *high pitched* or musical) (decrescendo or crescendo) time (systolic diastolic early or late), constant or alternating relation to heart

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B'ood Hemoglobin erythrocyte and leucocyte counts and the microscopic blood studies for erythremia anemia and leucocytosis are routine requirements The leucocyte counts and erythrocyte sedimentation rates daily are necessary for the diagnosis and follow up studies in patients with suspected or probable myocardial infarction

Blood chemical analysis for the plasma levels of glucose urea nitrogen nonprotein nitrogen and creatinine may give valuable information as to sugar and nitrogen metabolism In patients with edema serum albumin or blood plasma protein levels are important Serologic examination for syphilis is routinely done

Repeated blood cultures should be taken in all patients with unexplained fever particularly in cases in which there are also cardiac murmurs

Electrocardiographic studies should be carried out in every case where there is a suggestion of cardiovascular disease

Roentgen fluoroscopy teleroentgenograms kymograms and angiocardiographic studies are done in selected cases

Vital capacity determinations and if possible pulmonary ventilation indices should be made on admission and every third day

Exercise tolerance tests are done only in especially selected cases and after recovery



ABDOMEN—*Inspection* Distention is a common complication in all cardiac patients The umbilicus is usually not everted but may be with bulging flanks in the presence of ascites

Palpation of an enlarged tender **liver** suggests the engorgement of circulatory failure A palpable spleen follows infarction and the toxemia of subacute bacterial endocarditis *Percussion* may outline the borders and accentuate the tenderness while *auscultation* may reveal a friction rub over the spleen Abdominal aneurysms may be felt in some thin patients **Percussion** may reveal dullness in the flanks and demonstrate a fluid wave of ascites **Auscultation** yields no information other than borborygmus or occasionally a transmitted murmur or a splenic friction rub

EXTREMITIES—Note whether legs and arms show any color changes in vasomotor status or are **edematous** or wasted Look for **tremors,** abnormal movements and palsies atrophy flushed eminences palmar knots with **contractures** of tendons **Clubbed fingers** or hippocratic nails flame hemorrhages and tenderness of fingertips of muscles and of nerves are significant

Brachial radial ulnar femoral popliteal dorsalis pedis and posterior tibial pulses should be palpated

Blood pressure should be determined in both brachials and if high in a young person popliteal artery pressures should be established

Laboratory Studies in Circulatory Disorders

Sputum is examined for Herz fehlerzellen

Urine Specific gravity determined after withholding fluid for twenty four hours or after giving 0 5 c c of pituitrin establishes the concentrating ability of the kidney Albuminuria and cylindruria may result from congestion Glucosuria and acetonuria of diabetes mellitus should be looked for Total daily urinary output and fluid intake should be charted on all cardiac patients

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VII SEMIOLOGY IN CASES OF PERIPHERAL VASCULAR DISEASE

C C in Cases of Disorders of the Peripheral Arterioles or Arteries —Aches or pains in feet, calves of legs, thighs, hands or arms, soreness in the muscles, cramps on walking weakness numbness, paresthesia, tingling, coldness, conspicuous blanching, redness, or cyanosis are common clues

P I in Cases of Peripheral Vascular Disease —What were the circumstances of onset and possible precipitating factors? Extract a chronologic story of the affection from the first symptoms to the presentation Abnormal **fatigability** of the lower extremities, **shooting pains** in the calves and foot are usually noticed before symptoms become clear cut **Intermittent claudication** or paroxysms are brought on by sharply defined amounts of exercise and relieved by a definite amount of rest

Usually **associated symptoms** as **coldness** of the part **color changes,** uniform or blotchy **pallor,** and cadaveric blanching on elevation are the result of hydrostatic pressure effects with inadequate vis a tergo and blood pressure levels for certain small areas of the skin **Rubor** and **cyanosis** in the pendant limb are results of hydrostatic and vasomotor factors particularly relaxation of the venous limb of the capillary loops in the skin The patches of pallor may be evanescent or last a long time according to the lability of the neurovascular mechanism and the extent of organic changes

Symptoms of the **vasospastic** or vasoconstriction type of peripheral vascular disease are usually **paroxysmal,** of sudden onset or sudden offset The clinical picture develops in different **stages,** with sudden acute blanching with pain then cyanosis and coldness and finally on relaxation of the arteriolar spasm throbbing and redness In the less common **vasoparalytic** or vasodilatation type the onset is

throbbing redness and heat which usually subsides only after the immersion in ice water

Vasospasm is precipitated by cold and the vasoparesis by heat alcohol or histamine injections The amount of exercise required to bring on intermittent claudications amount of weakness developed the length of time necessary for recuperation after relaxation and rest the character of the pain the time of its onset the duration its relation to posture and to exercise should be determined **Rest pain** and night cramps are more serious if vascular in origin but are apt to be of spastic muscular origin

Associated symptoms of **heart** disease as congestive failure or of diseases of the **blood** or **nervous** system should be developed if present Palpitation tachycardia short nes of breath precordial pain edema pallor weakness vertigo spots before the eyes sharp headache and the tem porary paralysis occasionally occur

Per H in Ca es of Peripheral Vascular Disease—Check patient s **posture at work** and the history of extreme **environ mental conditions** especially exposure to extreme cold A history of a **knife wound or bullet wound** in an extremity may explain the presence of arteriovenous aneurysm Record excessive use of **tobacco**, particularly where there has been evidence of sensitization a feeling of a jag or hangover after the first cigarette in the morning is most important The use of **alcoholic beverage** continuously or intermittently *in most any form may or may not be sufficient as* an antidote for the nicotine vasocon triction of the vessels

Narcotics or other **drugs** to which the patient is addicted or to which *he has* become sensitized are important Note ingestions of toxins such as contaminating **ergot** in rye bread or in rye whiskey The exposure to chemical fumes of **lead, arsenic bismuth** or other heavy metal compounds may produce vascular damage

P H in Cases of Peripheral Vascular Disease—Very severe *infectious* diseases as **rheumatic fever** tonsillitis sinusitis arthritis Saint Vitus dance **typhoid** or **typhus**

are specific types of fever known to produce peripheral vascular damage Long continued **epidermophytosis** of the feet and occasional evidences of sensitization to the fungus and development of so called phytids may be most significant and contributory Genitourinary and **venereal infections** may be relevant The character and date of these processes should be recorded

The history of **chilblains,** frostbite or freezing of the parts, **thermal dermatitis,** particularly **phlebitis migrans** are known to be forerunners of the peripheral vascular disease, thromboangiitis obliterans

Physical Examination in Peripheral Vascular Diseases

P E in Cases of Peripheral Vascular Disease —Inspection acrocyanosis is common in long, thin extremities Note time necessary for development of cadaveric pallor in the skin of an elevated limb or for the appearance of rubor in cyanosis in the pendant part Note time necessary for restoration Patches of pallor may be evanescent or last for a long time Mottled skin cutis marmorata or livedo reticularis in exaggerated form as a result of exposure to fireplace heat, pernio from chilblains and periarteritis nodules are usually developed on the lower extremities but may be present in any part

Vascular disease is usually generalized but may be more marked in one part than another and the disturbance of the peripheral vascular system sometimes is much more disabling than central vascular trouble which may or may not be involved in a given peripheral vascular disease case and vice versa

Facies usually anxious may be drawn because of the pain may be masklike in scleroderma pinched and blanched grayish with cold perspiration in shock with vasoconstriction Intense flushing and throbbing erythrocephalgia unilaterally with attacks of headache may be due to an excess of histamine Floridity with skin venules spider angiomas with palmar erythema of thenar and hypo

thenar eminences may be present in hepatic cirrhosis on the face and over the nose The butterfly lesion of lupus erythematosis may be seen on the malar prominences extending over the saddle of the nose Ophthalmoscopic examination of the retinal vessels and the ocular fundi may reveal definite evidence of arteriolar disease as constriction tortuosity irregular lumina venule nicking hemorrhage or exudate **Neck** and **chest** examinations reveal only vague signs of peripheral vascular disease

Heart examination however may show as significant abnormalities a reverberating aortic second sound with a systolic murmur or a free diastolic murmur An initial pericardial friction rub occurs in lupus erythematosis disseminatus without any skin lesions Mitral stenosis with dilatation of the left atrium and auricular fibrillation in paroxysms or persistent may result in thrombus formation from which peripheral embolism may develop Signs of congenital heart disease and particularly of coarctation of the aorta may be suggested by difference in the blood pressure between the two arms or between the arms and legs

The **abdomen** may show signs of heart failure as enlargement and tenderness of the liver Abdominal aortic aneurysms may be palpated When a large *embolus* passes down the aorta it may temporarily interfere with the flow into the mesenteries and the renal arteries It usually lodges in the vital bifurcation of the aorta and obstructs the iliac artery first to one leg and then the other

Extremities The signs of major arterial obstruction affecting one and the other extremity may appear very dramatically Asymmetry of the two extremities may be due to greater atrophy of one or hypertrophic enlargement of the other extremity **Hypertrophy** occurs as the result of arteriovenous aneurysm of the affected leg This should be sought out and localized *On the* other hand **atrophy** of the muscles in one extremity or the other or both results from obstructive arterial disease The **skin** of an affected limb may show similar changes of atrophy and dis

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Physical Examination in Peripheral Vascular Diseases

P E in Cases of Peripheral Vascular Disease —Inspection acrocyanosis is common in long thin extremities Note time necessary for development of cadaveric pallor in the skin of an elevated limb or for the appearance of rubor in cyanosis in the pendant part Note time necessary for restoration Patches of pallor may be evanescent or last for a long time Mottled skin cutis marmorata or livedo reticularis in exaggerated form as a result of exposure to fireplace heat pernio from chilblains and periarteritis nodules are usually developed on the lower extremities but may be present in any part

Vascular disease is usually generalized but may be more marked in one part than another and the disturbance of the peripheral vascular system sometimes is much more disabling than central vascular trouble which *may or may not be* involved in a given peripheral vascular disease case and vice versa

Facies, usually anxious may be drawn because of the pain, may be masklike in scleroderma pinched and blanched grayish with cold perspiration in shock with vasoconstriction Intense flushing and throbbing erythrocephalgia unilaterally with attacks of headache may be due to an excess of histamine Floridity with skin venules spider angiomas with palmar erythema of thenar and hypo

The exact degree of skin temperature at the tip of every digit and up the extremity may be determined by the thermocouple The part played by vasoconstriction is established by inhibiting vasomotor tone by contralateral immersion, fever production plexus or nerve block and repeating skin temperature tests A rise of 2° to 3° C indicates that vasospasm is an important factor No rise means organic obstruction

Palpation of the peripheral arteries should be carefully carried out The pulses in axillary brachial radial ulnar femoral popliteal posterior and anterior tibial and dorsalis pedis arteries should be compared Blood pressures should be determined in both arms and in both legs

Oscillometric indices should be determined at the same levels in paired extremities The accurate quantitative measurement of arterial pulsation may be established with a Boulitte von Recklinghausen or Hellige pulsimeter The extent of the oscillations depends to some extent upon the blood pressure as well as on the patency of the vascular bed In normals the variations are considerable In the brachial 12 to 2 arbitrary scale points in the radial ulner 10 to 1 in the femorals 16 to 4 in the popliteals 12 to 4 and in the tibials 10 to 3 are the usual limits of oscillation

Histamine flares after intracutaneous injection and wheals of normal saline give some evidence of the adequacy of the skin circulation at various levels I V fluorescein helps

Blood oxygen studies of venous blood from a limb in which there is an A V aneurysm will show abnormally high oxygen levels

Roentgen arteriography or angiography after the injection of concentrated 70 per cent solution of nontoxic opaque substances as diodrast or neoskiodan makes possible visualization of the arteries and veins in life This method is not without danger and should be employed only in questionable cases of arteriovenous aneurysm or other conditions where surgical interference is contemplated

appearance of the lanugo **hair** **Nails** may show transverse ridges or longitudinal ridges and be very delicate, thin, and brittle or most significantly, may show evidences of thickness due to **fungus infection** Infected nails are usually dry, brittle and discolored, particularly on the toes **Perspiration** is reduced on the affected extremity

Skin **Pallor** may appear in the beginning of a paroxysm, in a spastic condition Pallor of the part appears on elevation to an angle of about 45 degrees in a chronic arterial lesion If the hand or foot is exercised in this elevated position cadaveric whiteness, most conspicuously in the palmar and plantar surfaces develops in the presence of occlusive arterial disease The length of the time that pallor persists after the part has been brought to the heart level indicates the grade of obstruction or the lack of the propulsive power sufficient to drive the blood into the peripheral arteries and arterioles

Color changes of varying grades of redness and blueness develop in dependent parts that are the seat of chronic vascular disease of spastic but particularly of organic type Intense pallor then cyanosis and finally rubor develop in succession in the three stages of **Raynaud s syndrome** as the spasm of the venous limb and finally the complete capillary loop relaxes as a result of anoxia In Raynaud's disease the cyanosis is always temporary These changes may also be present in some cases of thromboangiitis obliterans Cyanosis developing indicates increasing vascular disease and this existing in a cool extremity forbodes gangrene There is usually considerable pain

Coldness or **heat** of the extremities may be determined by the touch of the examiner Running the examining hands down distally he should note any sharp change in skin temperature, the paired extremities should be compared Normally sensitive fingers may detect changes of as little as 1° by this method Coldness of the part may be equal bilaterally when due to vascular spasm Therefore, particular attention should be paid to unilateral coldness or heat

VIII SEMIOLOGY IN DISEASES OF THE GASTRO INTESTINAL TRACT ESOPHAGUS STOMACH INTESTINES COLON AND ASSOCIATED ORGANS LIVER AND PANCREAS

C C in Gastrointestinal Cases —Symptoms as pain nausea vomiting of fluid (water brash) or acid food or of brown or red blood (hematemesis) foul breath loss of appetite coated tongue may be accompanied by difficulty in swallowing gas belching heartburn (pyrosis) distention borborygmus (flatus) passing of gas jaundice constipation diarrhea griping (tenesmus) colic watery or mucopurulent or blood streaked (melena) tarry or acholic stools Thirst weakness dizziness palpitation dyspnea and pallor accompanying severe hemorrhage which may be exsanguinating A cold sweat and acute shock may follow perforation of a viscus Rapid loss of weight and strength may be the only complaint in cases of cancer

P I in Gastrointestinal Cases —**Pain** Note exact location and radiation nature time relation to eating duration *and character* as slight discomfort vague distress dull ache burning sensation sharp stabbing continuous steady persistent paroxysmal excruciating or colicky pain which doubles up or causes *collapse* Describe onset as sudden at night before or after meals with an empty or a full stomach time *regularly* predictable or indefinite Precipitating factors as emotional stress certain types of food exertion or activity *position* or trauma are to be set down and relief factors milk or crackers antacids rest pressure or position

Note clinical *course* long or short continuous or intermittent cyclic typical or atypical pattern of pain Note associated symptoms outlined *under C C* especially degree *of loss* of appetite (anorexia) lost before or after smelling food or eating of a few *mouthfuls* or recovery of by eating this or that food inordinate or voracious appetite (bulimia)

Laboratory Examinations in Peripheral Vascular Diseases

Studies may reveal some significant abnormalities in the urine and blood

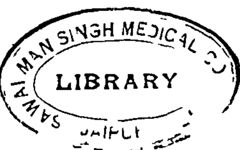
The **urine** specific gravity may be high and the tests for **glucose** and **albumin** positive and the sediment may contain many erythrocytes or other elements

The **blood** may show abnormalities in the erythrocytes or leucocytes or in the thrombocytes Eosinophilia is often present in periarteritis nodosa Abnormal hematocritic volume of packed red cells calls for complete hematologic studies also for calculation of mean corpuscular volume hemoglobin and hemoglobin concentration The blood chemistry studies for the blood sugar and blood cholesterol levels are most important

The gastric analysis is done routinely in anemia cases and histamine is used to demonstrate that an achlorhydria is absolute

The feces may show evidences of poor digestive function and may contain blood cells

Biopsy of vascular tissues for histologic study has occasionally *revealed the diagnosis*



Epigastric distress Note feeling of pressure or distention exact location relation to taking of any or one kind of *food* time duration method of relief effectiveness, *constant or inconstant flatulence* Reflex pylorospasm is common in appendicitis *chronic cholecystitis* and in peptic ulcer and also occurs in carcinoma

Abdominal pain Note seat or location time night or early morning pain character degree rhythmical or constant colicky boring cutting gnawing lancinating tearing knifelike burning etc circumscribed diffuse radiating direction frequency and time of occurrence in relation to ingestion of food or drink effect of diet on bowel movement *catharsis or enema* Note effects of food milk pressure heat antispasmodics alkali or acid which are ineffective in gallstones renal colic or gastric crises

Unusual sensations in abdomen Note hiccups (singultus) rumbling peristalsis of gas movement (borborygmus) rumination (merycismus) or a foreign body constriction or cramps Note location severity time relation to eating and whether relieved by heat or cold

Peristalsis Note time location direction of duration of accompanying sensations *effects on and results of bowel movements*

Flatulence Note duration of degree constancy or variability relation to food noises in abdomen Is gas passed upward as belching or downward as flatus?

Tumor masses bunches or knots in abdomen Note when discovered location position constancy or variability shape size and change in size mobility tenderness relation to pain in any definite region as of liver or gall bladder or to generalized soreness

Jaundice Note *time of onset* duration degree of intensity constancy *or variability* associated symptoms painless or painful *itching bleeding* and nervous symptoms Note *color of urine* and of feces

perversions (pica), desire for articles not foods (parorexia), cravings or idiosyncrasies

Food habits Note number of meals, regularity, hurried with bolting or inadequate chewing, quality and quantity of food amount of water and other fluids taken with or between meals Note any food intolerance as for fats, greases, etc, idiosyncrasies or allergies Is the **diet** balanced, as to protein, fat, carbohydrate content with minerals and vitamins? Record excessive indulgence in condiments coffee tea, carbonated sweet drinks confectioner's chocolate, alcoholic beverages or tobacco *Is* **taste** sense normal or abnormal lost agreeable or disagreeable, for sweet, sour bitter, salt, or perverted to a stale or foul reaction Note alterations of **saliva**, drooling (salivation) dryness (xerostomia), a burning or soreness in mouth (stomatitis) of the tongue (glossitis) or of the throat (pharyngitis) Is **swallowing** easy or difficult for solid or soft food? Note apparent seat of constancy or variability, change of degree precipitating factor, and duration of obstruction **Dysphagia** varies in cardiospasm and esophageal cancer pain seat and character

Nausea, regurgitation, or vomiting Note apparent causes **time,** on going to bed or on getting up (matinal), relation to meals (postcibal), interval after eating, amount of **vomitus,** taste, odor color blood or bile, character unchanged or changed condition of food stercorous material recognizable food eaten many hours before consistency amount of food persistence, methods of *relief* *Symptoms accompanying* vomiting as weakness faintness pain colic cramping sensation may be relieved or aggravated by regurgitation or **eructation** of bitter neutral or sour tasting gastric fluid "water brash" Note **hemorrhage** (hematemesis) time of occurrence relation to taking of food or drink amount character and possible source of blood as pharyngeal tracheal esophageal gastric or intestinal Note stools number and character, foul sticky black tarry or streaked with dark or bright red blood (melena or hemafecia)

as in galvanizing work or to lead arsenic, phosphorus or other poisons irritating dust poor ventilation and illumination Head colds or other infections may *contribute to gastrointestinal* symptoms of infectious hepatitis or mononucleosis

F H in Gastrointestinal Diseases—Study carefully the emotional stability of the family as well as the body build or constitutional make up Note any history of digestive or bowel disturbances in the patient s father mother brothers or sisters Inquire especially as to the presence of any type of allergy or heredofamilial gastrointestinal disease as peptic ulcer or chronic dyspepsia or cancer in relatives and collaterals

P H in Gastrointestinal Cases—Local infections about *the t th in the* tonsils or in the accessory nasal sinuses Note infectious diseases especially *those prone to infect* the gall bladder as typhoid fever infectious epidemic or catarrhal jaundice influenza and other respiratory tract disease dysentery tuberculosis syphilis and lymphopathia venerea Excessive use of alcoholics and tobacco frequent mental upsets shocks and sexual abuses are often contributory especially in functional gastric disorders

P E in Gastrointestinal Patients—Note every detail be complete as clues may be *present even in the* general survey The asthenic or hyposthenic individual with a long history of dyspepsia is more prone to have peptic ulcer sthenic build middle age dyspepsia of short duration and emaciation or cachexia suggest cancer while *obesity* and a hypersthenic habitus *seem* to predispose to gall bladder disease Evidence of the common vitamin deficiencies should be carefully looked for (See Appendix)

Facies may be pinched in dehydration drawn and thin (hippocratic) in peritonitis with *superficial* venules and icterus (hepatic) in *cirrhosis of* the liver Smooth glistening and florid countenance *suggests* chronic alcoholism *Pallor* may be due to a bleeding *gastric* ulcer **Eyes** may show Argyll Robertson *pupils* pallor of the conjunctivae

Defecation Note regularity, pain, location, type tenesmus, fissure, hemorrhoids (hepatic cirrhosis), fistula (tuberculosis), duration

Feces Note **number**, character or consistency of stools, constant or variable, appearance, color, **bloody**, blood streaked (low lesion, hemorrhoids), mixed, occult bleeding (high lesion), black changed blood, **tarry** or drugs (iron or bismuth), pus and mucus (colitis) frothy or yeasty (sprue), bulky, fatty (pancreatic insufficiency), or clay colored (acholic, due to biliary obstruction) If **constipated**, what is and has been used to overcome it? If **diarrheic**, what treatment has been tried and with what results?

Per H in Gastrointestinal Cases—Special attention should be paid to **habits of eating and drinking**, whether **meals** are taken in solitude or in company, at home or in a cafe, number of hours of regularity of schedule of feedings reading at meals, time allowed rate of ingestion mastication Fletcherization, or bolting of food uniformity of intake kind quality and quantity of foods Note balanced **diet**, carbohydrates proteins fats, minerals, vitamins residue food preferences and seasoning, desired amount of salt, pepper condiments of milk water coffee tea cocoa alcohol, of tobacco when and how taken

Note type of life high tension or nerve racking, active or sedentary and the general **mental reaction** and emotional **state**, working hours and tension responsibilities worries friction with co workers pressure of work hours of sleep, restful or disturbed Note whether domestic life is pleasant compatible, or disagreeable Note whether there have been other problems as financial trouble or illness in other members of the family Inquire as to hobbies, diversions out door exercise, travel, changes of food and water and possible sources of infestations

Note disturbances of sexual life libido satisfaction, fears irregularities or abnormalities, nervous shocks great disappointments or failures Exposure to fumes zinc poisoning

as in galvanizing work or to lead arsenic, phosphorus or other poisons irritating dust poor ventilation and illumination head colds or other infections may contribute to gastro-intestinal symptoms of infectious hepatitis or mononucleosis

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Facies may be pinched in dehydration drawn and thin (hippocratic) in *peritonitis* with superficial venules and icterus (hepatic) in cirrhosis of the liver Smooth glistening and florid countenance suggests chronic alcoholism Pallor may be due to a *bleeding* gastric ulcer Eyes may show Argyll Robertson pupils pallor of the conjunctivae

or icterus or jaundice of the sclerae **Mouth,** lips may show pallor or herpes, buccal mucosa, herpetic ulcers or aphthous stomatitis salivation, xerostomia or leucoplakia **Breath** may be alcoholic, urinous, fetid or fruity **Tongue** may be coated furred, beefy red or magenta colored, rough furrowed, geographic or smooth and atrophic with normal sense of taste (gustation) **Gums** may be pale, firm or spongy retracted infected with pyorrhea alveolaris or Vincent's angina or show a *lead line* **Teeth** Note any missing grinders malocclusion artificial dentures, fitting of plates efficiency of mastication In the **pharynx** note tonsils bulges palates palsy gag reflex dysphagia

In the **neck,** note lymph nodes and look for the supraclavicular signal gland of Virchow Suprasternal notch pulsation is significant

In the thorax study the **lungs** Dullness bronchial breathing and crepitant rales at the apices suggest pulmonary tuberculosis which produces gastrointestinal symptoms The level of the right leaf of the diaphragm may be elevated in liver or subdiaphragmatic abscess

Examine the **heart** for enlargement increased retromanubrial dullness accentuated aortic second sound and a systolic murmur of aortitis or abnormal pulsation of aneurysm These may give rise to gastrointestinal symptoms

Gastric tympany of a high placed dilated stomach may extend up into the precordium displace the heart and give rise like hiatus herniation to confusing symptoms

ABDOMEN —In diseases of the organs of digestion emphasize every detail concerning the examination of the abdomen

Inspection Note development level **size shape** form **or contour** on lying and on standing (large prominent protuberant rounded distended bulging of flanks pendulous symmetrical asymmetrical flat retracted or scaphoid) Note umbilicus type and position deformities or eversion herniae, linea transversae linea alba striae (pregnancy obesity, or previous distention) eruptions (rose spots) Note

abdominal respiratory or muscular movements and reflexes superficial veins enlarged distended (caput medusae) pulsations tumefaction patterns or visible movements gastric or intestinal peristalsis

Palpation Use warm hands begin to palpate away from site of suspected trouble approach gradually at first palpate superficially note hyperesthesia later palpate deeply do not dig for organs await pushing down by deep inspiration to meet the palpating fingers Differentiate fecal masses tumors epigastric ventral or inguinal herniae

Note **panniculus thickness** **abdominal wall tension** flaccid or boardlike voluntary or involuntary resistance rigidity or spasm of muscles tenderness superficial or deep Test especially for **appendiceal tenderness** over McBurney's point and for gall bladder tenderness by Murphy's maneuver or rebound Note bulging of ascites fluid wave fluctuation or impulse on tapping Try ballotement *for organs or masses* Splashing sounds reverse peristalsis Describe **herniae** epigastric ventral or postoperative direct or indirect inguinal determine impulse on coughing

Masses Differentiate bellies of recti between lineae transversae and feces *from tumors* Note location character of surface or edges or borders relation to organs shape size mobility on respiration or pressure hard soft smooth rough hobnail nodular or lobulated Ballottement tenderness even fluctuation expansile or transmitted pulsation and succussion sounds may be elicited by careful manipulation

Positions of organs Lower pole of right kidney is normally palpable liver and spleen borders are not usually felt in deep inspiration if so organs are enlarged If there is a palpable **liver edge or gall bladder spleen or kidney** note position mobility outline of borders consistency hardness softness cystic nature thickness of lower edge surface character smoothness or unevenness of surface scars nodules tumors depressions Differentiate a prominent Riedel's lobe or hepar lobatum from tumor Look for tenderness

pressure, friction or rub over an abnormal organ Palpate carefully in regions of the pancreas pylorus, cecum, ascendens, transversus, descendens and sigmoid colon for tumors, gas, spasticity, or fecal masses Be on the lookout for intussusception and intestinal obstruction Feel for a palpable tender spastic, or a loaded descendens and sigmoid colon, and for distended bladder or enlarged uterus

Percussion Note general resonance, outline carefully dull areas of liver and gall bladder and spleen, though such outlines may not be absolutely accurate Note effect on the curve of dullness of changing positions side to side to back and to knee hand position, on dullness in flanks bladder uterus or tumor outlines Outline stomach and colon if distended after inflation to determine size position or relation to a mass Look for meteorism or distended intestines Differentiate free gas in the peritoneal cavity and percuss for shifting dullness of ascites in the flanks

Auscultation Check for borborygmus, succussion splashing and gurgling sounds for friction rubs especially in splenic region in cases of suspected infarction Listen for murmurs in abdominal aorta and great veins and for abdominal aneurysmal bruits placental or fetal heart sounds or murmurs

ANUS AND RECTUM Inspect perineum for external or internal thrombosed or bleeding hemorrhoids rectal prolapse ulcers fissures fistulae pilonidal sinus ischiorectal abscess By digital palpation note impacted feces, sphincter tightness or relaxation masses and tenderness may be demonstrated Do a proctoscopic examination for higher masses or ulcers and secure exudate for microscopic examination

EXTREMITIES Note palmar flush or erythema of thenar and hypothenar eminences in hepatic cirrhosis acrocyanosis hyperactive tendon reflexes, or obliterated deep tendon reflexes, hyperalgesia or hyposensitivity analgesia or anesthesia

Laboratory Routine Examination in Digestive Diseases

Feces Note color form consistency quantity the presence of odor neutral fat or fatty acids Do chemical tests benzidine or guaiac for occult blood Schlesinger's test (zinc chloride fluorescence) for urobilin Schmidt s for bile and Wohlgemuth s for diastase Nitrogen content of the dried feces is normally under three grams

Urine Note color determine specific gravity test for albumin sugar urobilinogen bile pigment and salts indican and Somogyi s test for amylase activity in pancreatic disease Study microscopically for pus cells erythrocytes casts or mucous cylindroids or shreds and for tyrosine and leucine crystals in acute jaundice Ehrlich s aldehyde test for urobilinogen in the presence of bile is done only after precipitation of the pigment by hydrochloric acid

Sputum Study smear for herzfehlerzellen and tubercle bacilli

Vomitus Note volume character recognizable food particles acidity levels occult blood lactic acid and microscopic findings

Gastric Analysis Examine fasting contents for volume acid content and for recognizable vegetable fiber as tomato juice taken the preceding day Under the microscope look for erythrocytes Boas Oppler bacilli yeasts or sarcinae Examine for odor bile food particles mucus blood pus foreign bodies or parasites Determine chemical acidity lactic acid content and test for occult blood

Fractional gastric specimens are taken after a 7 per cent alcohol test meal without and if achlorhydric with histamine injection (0 5 mg) if the first two fifteen minute fractions are negative to Toepfer s reagent

Study *duodenal contents* collected after the injection of secretin or mecholyl for bicarbonate and enzyme content Comfort and Osterberg showed that sodium bicarbonate and pancreatic enzyme content may be low in pancreatic disease

pressure, friction or rub over an abnormal organ. Palpate carefully in regions of the pancreas, pylorus, cecum, ascendens, transversus, descendens, and sigmoid colon for tumors, gas spasticity, or fecal masses. Be on the lookout for intussusception and intestinal obstruction. Feel for a palpable tender spastic, or a loaded descendens and sigmoid colon, and for distended bladder or enlarged uterus.

Percussion. Note general resonance, outline carefully dull areas of liver and gall bladder and spleen, though such *outlines may not be absolutely accurate.* Note *effect on the* curve of dullness of changing positions side to side, to back and to knee hand position, on dullness in flanks, bladder, uterus or tumor outlines. Outline stomach and colon if distended after inflation to determine size, position, or relation to a mass. Look for meteorism or distended intestines. Differentiate free gas in the peritoneal cavity and percuss for shifting dullness of ascites in the flanks.

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ANUS AND RECTUM. Inspect perineum for external or internal thrombosed or bleeding hemorrhoids, rectal prolapse, ulcers, fissures, fistulae, pilonidal sinus, ischiorectal abscess. By digital palpation note **impacted feces,** sphincter tightness or relaxation, masses and tenderness may be demonstrated. Do a proctoscopic examination for higher masses or ulcers and secure exudate for microscopic examination.

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IX SEMIOLOGY IN DISEASES OF THE KIDNEYS URINARY TPACT AND GENITALS

C C in Renal and Urogenital Cases —Headache visual disturbances blurring blindness drowsiness anorexia nausea vomiting diarrhea weakness backache pruritus dyspnea puffiness of the eyelids face and hands as well as of the legs and feet epistaxis anuria oliguria polyuria smoky urine burning on micturition frequency diuria nocturia urgency strangury urina spastica dysuria hematuria retention incontinence enuresis discharge or colicky pain stone ache in testicle or perineum are common complaints

P I in Renal and Urogenital Cases —Note the date of the first recognizable complaint and the progress of it and the associated symptoms in chronologic order The onset may be acute and related to a previous illness but it is *frequently* painless and insidious

Headache is general and usually severe and continuous and associated with suddenly or slowly developing visual disturbances and puffiness of the eyelids and the body in general as anasarca Soporific tendencies loss of appetite nausea vomiting diarrhea along with cloudy smoky or bloody urine in scanty volume may be reported by patients with acute glomerulonephritis

Burning *on urination* is usually associated with frequency and often the urine is clear but it may be clouded Pain in the urinary tract may occur at the start during or after urination and may be sharp and colicky followed by the passage of gravel or stone Lacerating renal or ureteral colic radiates into the genitals and is usually followed by hematuria

Dull aching in either flank suggests a hydronephrosis and may show sudden polyuria with relief Usually there have been previous attacks of colic or aching and inquiry should be made In cramping pain of mild moderate or severe grade continuous or intermittent note duration locat

Pancreatitis should be suspected if "colic" or pain persists for many hours or days and if it radiates to the left back

Blood Estimate hemoglobin content do red and white cell counts Obtain hematocrit volume of packed cells and calculate color volume saturation indices Study blood smears and make differential count of leucocytes and look for parasites Do Ehrlich's aldehyde urobilinogen test and the diazo reaction the van den Bergh test and the icterus index on the blood serum of patients with jaundice

Test for serum amylase by Somogyi's and for lipase by the Cherry Crandall method in suspected pancreatic disease cases Determine the blood serology by complement fixation or precipitation tests and blood levels in milligram per cent of glucose N P N and U N and cholesterol and ratios Blood calcium is lowered when there has been pancreatic fat necrosis and calcium soap formation

Liver Function Tests—Prothrombin time water excretion galactose tolerance bromsulphthalein clearance hippuric acid synthesis quantitative serum bilirubin clearance test, cholesterol esters and Hanger cephalin flocculation test when done properly in subdued light will yield information as to the status of the liver Normal plasma protein levels are evidences of the integrity of the liver parenchyma Prothrombin level is decreased in severe liver disease

renal damage even decreased excretory function Hyper parathyroidism and other disturbances with calcium mobilization and excretion may produce renal rickets calculi Occupational chemical intoxications may produce renal irritation

In genitourinary disturbances obtain a careful history of venereal diseases as to urethritis gonorrhea date of exposure and appearance of discharge treatment duration recurrences complications glands stricture prostatitis cystitis or pyelitis Inquire as to soft chancre or chancroid (Ducrey) buboes granuloma inguinale lymphopathia venerea (Frei) or hard chancre (haircut ' hard sore Hunterian lesion lues or syphilis) Inquire as to date of appearance duration beginning of treatment details local and constitutional date and type of onset of secondary lesions The sexual history in detail must be obtained with great care and tactfully Put the questions to the patient in absolute privacy

M H in Renal and Urogenital Cases —Inquire as to number of marriages compatibility during each frigidity or vaginismus extramarital relations mistress or prostitute List pregnancies during each marriage dates and character of termination and puerperium in each Note prophylactic measures used against disease contraceptives used operations on genitals or uterus Establish health of consort spouse common law wife or wife as to pelvic inflammatory disease pus tubes discharge or pregnancies Record repeated abortions or miscarriages as to types stillbirths deaths in early infancy ophthalmia neonatorum keratitis rhagades pegged teeth or hearing defects in siblings

F H in Renal and Urogenital Cases —Inquire as to cases of nephritis (Bright s disease) in the family also note details as to any disease of the urinary or genital organs in immediate relatives

Physical Examination in Cases of Diseases of the Kidneys Urinary Tract and Genitals

P E in Renal and Urogenital Cases —Do a complete general physical examination emphasizing study of the vascular

radiation, accentuation by standing, movement, menstruation urination or defecation Such data are important as is also subsidiary pain

If there is a genital, urethral or vaginal discharge, its duration, amount, character, odor, color, yellow or green puslike, or bright red, bloody with or without associated itching or irritation should be described Find out and state whether sulfonamide or other treatment had been tried in what amounts and for how long Have patient describe any gross lesion as to date of appearance, sensitivity, change in size, shape, location, consistency and mobility

Per H in Disease of Kidney, Urinary and Sexual Organs —Inquire into occupation and associations, especially at recreation times, as to habits alcoholism or drug addiction Note exposure to tuberculosis, pyogenic as well as venereal infections and sexual habits and life, excessive venery or uncontrollable libido perversions, nymphomania, homosexuality, masturbation potency or impotency virility or sterility

Note menstrual history, menarche regular irregular interval, duration of flow amount number of pads or napkins per day dates of onset and ending of the last period disturbances, type and severity, intermenstrual bleeding or spotting Dysmenorrhea with or between periods Mittel schmertz may be associated with urinary, mammary gastrointestinal, circulatory respiratory or nervous system Get details of previous gynecologic disorders and operations

P H in Renal and Urogenital Cases—Inquire as to a history of certain infectious diseases especially scarlet fever septic sore throat and repeated tonsillitis Note exposure to cold and dampness which results in chronic low grade infections with exacerbations and frequent insults to the kidney These are the most important factors in the production of nephritis Hypertension and arteriosclerosis are sooner or later associated with renal degeneration Thyroid deficiency and severe anemias often show signs suggestive of

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system Note extent and degree of edema or anasarca of acute nephritis and general appearance and state of health

Head **Facies** may show slight exophthalmos with nephritic or nephrotic signs as pale, pasty edematous puffs, baggy eyelids Look for venous engorgement in the jugulars

Eyes Do an ophthalmoscopic examination for papill edema or choking of optic nerve head discs retinal hemorrhages or exudate, vascular changes in arterioles as constriction, silver wire arterioles, increased tortuosity, widening of central streak irregularities of the lumina of the arterioles narrowing constriction of the venules A V nicking distal to the arteriolar crossing

Thorax Study the **heart** for enlargement dilatation or pericardial effusion friction rubs Bright's pericarditis for distant heart sounds gallop rhythm abnormal accentuation of the aortic second sound with or without a systolic murmur, and the presence of and degree of hypertension, especially of the diastolic level

Abdomen Inspect for appearance scaphoid or protuberant, distended or prominent generally or in any part, eversion of umbilicus bulging of the flanks or in one kidney region, asymmetrically bilaterally or in the lower abdomen Note any masses contusions or scars **Palpate** with patient on his back and with his knees drawn up to afford maximum relaxation of abdominal muscles Immersion in a tub of hot water or injection of a barbiturate may be necessary to get good relaxation Separation of recti may permit easy palpation of right kidney liver and spleen

Describe any masses in detail Look for localized pelvic or costovertebral tenderness or rigidity Note location and degree of pain and tenderness and palpate cautiously *for resistance* rigidity or boardlike muscle spasm Try for rebound tenderness Press deep in costovertebral angle and deep in the loins for tenderness

Describe the feel or consistency of any mass or abnormally dislocated or developed and palpable organ Determine movability with respiration

The lower pole of the right kidney is the only normally palpable part and can be felt only in thin patients during bimanual palpation deep in the flank after deep inspiration Ballottement may reveal the outline of a kidney A full bladder may be visible and palpable or be revealed only by its dullness **Percussion** is used to confirm the findings of inspection and palpation and in locating and outlining solid masses **Auscultation** may be used to advantage in checking percussion but rarely otherwise in this field The blood pressures in both brachials should be recorded

The **genitalia** are most carefully examined by inspection and palpation Note abnormalities of size and shape of the whole or parts due to developmental malformations as phimosis paraphimosis hypospadias caruncle extropia of the bladder and cryptorchidism hydrocele or varicocele

Describe acquired abnormalities as urethral discharge its character and quantity balanitis congestion edema ulcer chancre scars or tumor of the glans or penile shaft In the female parts look for caruncle cystocele or rectocele

Palpate the penis for chordlike induration the scrotum for spermatic cords testes and epididymi varicosities tenderness masses cysts or hydrocele Transilluminate scrotum containing tumors or cysts Do digital rectal palpation for *sphincter tone* strictures periurethral abscess urinary sinuses seminal vesicles Examine prostate for tenderness gland size *consistency* fixation *surface contour diffuse or nodular enlargement* Massage and strip very *carefully if there is acute inflammation* otherwise manipulation should be carried out vigorously and the fluid expressed through the urethra and from the *meatus should* be examined microscopically Feel for Cowper's glands with the index finger in the rectum and the thumb in the *perineum*

Vaginal examination is always to be done with a nurse in attendance and *only* after consultation with superior officer It is rarely justifiable in a virgin as local inspection and rectoabdominal bimanual palpation will reveal most malformations a urethral caruncle urethral or leucorrheal dis

charge, condition of vulva and hymen, edema or varicosities Describe introitus or outlet, whether virginal, marital, nulliparous, multiparous or relaxed, with or without cystocele or rectocele or prolapsus uteri

In married women do a speculum examination before undertaking bimanual palpation, noting appearance of vaginal mucosa and cervix, presence of lacerations erosions or discharge Describe in detail Then feel for Bartholin's and Skene's paravaginal glands Palpate the cervix for consistency patency or laceration of the external os, and body of the uterus, as to size, shape, consistency, position, *movability malformations, and the adnexa for tenderness* or movability of ovaries tubes size shape, adhesions "frozen" painful masses or tumors A complete bimanual gynecologic examination under anesthesia is done if resident physician feels that it is indicated and preferably only in the presence of a gynecologist

Instrumental examinations should be done only with the approval and under the supervision of staff members The passage of catheters, bougies sounds filiforms or ferrets endoscope or cystoscope requires special training A thorough knowledge of the anatomy of the parts of the contraindications, and of the technique, of antisepsis of asepsis of adequate lubrication and gentleness are necessary for a successful genitourinary examination

Laboratory Routine Examinations in Urogenital Cases— Watch the patient urinate Note the strain necessary and the size shape and force of stream Learn methods of collecting uncontaminated specimens Accurately identify each specimen Refer to standard urologic textbooks for methods and interpretation Examine only **fresh** specimens

Urine On gross inspection in a good light note odor color **mucous shreds,** pus **blood,** crystals etc Do two glass test for determining source of abnormal material Do usual *routine and chemical tests for* **albumin** *and* **sugar** Do **microscopic examination** for oxalate crystals pus cells red blood cells, pus or renal epithelial cells hyalin or gran

ular casts or cylindroid Study stained sediment for identification of bacteria Gram s stain is most commonly used and Ziehl Neelsen acid fast stain is rather routinely applied Cultures on special media and guinea pig inoculations should be used in all doubtful cases.

Smears of exudate for staining and cultures of all urethral discharges should be made and examined Express purulent material from ulcers draining sinuses and seminal vesicles and secretions from female urethra and Bartholin's or Skene s glands Massage prostate Apply Papanicolaou s stain

Kidney Function Tests Concentration tests after twenty four hours of dehydration or for several hours after injection of 1 c c of surgical pituitrin are the best Phenol sulphonphthalein excretion test *fifteen minutes after injections* may yield some valuable information

Blood Chemistry Studies Nonprotein nitrogen *and* urea nitrogen urea clearance blood plasma protein levels and serum albumin and serum globulin ratios are of particular value in every patient with edema The routine **blood hemoglobin** determination and **red** *and* **white** blood cell counts with differential studies and volume of packed cells are in order in all cases and should be repeated frequently if abnormalities are found

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upper part of the anterior surface of the symphysis pubis and normally measures 18 to 19 cm

Oblique Diameters Designated right or left distance from the right or left posterior superior iliac spine to the opposite anterior superior iliac spine The oblique diameters are of value when some form of pelvic asymmetry is suspected The right is normally 22 0 cm and the left 21 5 cm

NORMAL INTERNAL MEASUREMENTS —

Diagonal conjugate is the distance from the sacral promontory to the posterior inferior surface of the symphysis pubis Measurement of 11 2 cm or less forebodes potential mechanical dystocia

True conjugate is obtained by subtracting 1 5 *to* 2 *cm* from diagonal conjugate

Buschial diameter is the distance between the mesial sides of the ischial tuberosities by Thom s pelvimeter and is normally 10 to 11 cm If this diameter is less than 9 cm the anterior and posterior sagittal diameters should be determined

Laboratory Examinations in Obstetric Cases

Urine analysis with recording of the specific gravity albumin and sugar content and microscopic study of the sediment for leucocytes erythrocytes and casts should be done regularly each month for the first two trimesters then every two weeks for two months and weekly during the last month

BLOOD STUDIES —If symptoms as weakness albuminuria cylindruria glycosuria or pruritis develop blood counts and blood chemical studies should be made especially N P N U N and sugar

Blood typing cross agglutination and determination of the Rh factors should be made

tinguish the outlines of the fetus by palpation through the abdominal walls, and this becomes easier the nearer term is reached

First Maneuver Determine how near the fundus uteri is to the xiphoid cartilage Decide what portion of the fetus occupies the fundus of the uterus

Second Maneuver By palpating the sides of the abdomen the examiner decides which side the fetal back is on and on which side of the mother the fetal small parts are felt

Third Maneuver By grasping the lower portion of the abdomen just above the symphysis pubis, the examiner decides what portion of the fetus is within his grasp

Fourth Maneuver With examiner facing the patient s feet and with fingers extended he makes deep pressure in the direction of the axis of the superior strait In this manner he decides on which side of the mother is located the occipital prominence of the fetus

Auscultation Location, character, and rate of fetal heart beat

VAGINAL EXAMINATION —This should be done along with internal pelvimetry at the first visit and not after the seventh month of pregnancy Note the presence of any abnormalities of the cervix and vagina such as infections or the results of earlier birth injuries

OBSTETRIC PELVIMETRY

NORMAL EXTERNAL MEASUREMENTS —

Interspinous Diameter Distance between the anterior superior iliac spines is normally 26 cm

Intercrestal Diameter Distance between the most widely separated parts of the iliac crests is normally 29 cm

Bitrochanteric Diameter Distance between the trochanters is normally 32 cm These are the least important of the external measurements

External Conjugate or Baudelocque s Diameter extends from the depression under the last lumbar vertebra to the

upper part of the anterior surface of the symphysis pubis and normally measures 18 to 19 cm

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X SEMIOLOGY IN MENTAL AND NERVOUS DISEASES*

Psyche, Mental Status, Personality, General Behavior, Emotional Make up

The study of every patient from the psychiatric point of view, determining his mental status and emotional reactions is paramount to the successful practice of medicine. No adult patient can be considered merely as a summation of anatomic structures and physiologic functions.

Psychobiology deals with the range and variations of personality functions of so called normal human beings. Psychopathology encompasses the study of abnormal personality functions. The student, interne, resident, and certainly the physician must develop a broad tolerant attitude that will cause him to approach each patient as a specific individual different from every other individual with problems of his own. The physician must have the ability to appreciate *situations created by the patient's reactions to his specific* environment and exposures.

Study of Personality Functions

The patient should be considered in the light of his personal history as a totally integrated personality and viewed broadly as an organism reacting to stimuli with responses that are either general universal or definitely individual. A knowledge of the total personality evaluated in terms of personality functions effecting a more or less normal adjustment to life yields a rational scientific concept of the mental status. The personality functions play a role in the problems of health happiness efficiency and creativeness. *A knowledge of emotions and the reactions of* the patient to the various stimuli of life is prequisite to gaining complete *collaboration of the patient*.

Inquiry must be carried out in absolute privacy with a practical outline of minimal points to be covered in order to get the **necessary data** for estimating personality function. Such study cannot be rigidly standardized but must

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*The methods of Prof. Albert M. Barrett, Franklin Ebaugh, Titus Harris, T. I. Watters and others have been adopted.

be individualized It is a minimal necessity to get details as to the following

1 *Birth and early development* Age date of birth, age at which talking and walking began unusual incidents general health in infancy and childhood disposition tantrums bad dreams bed wetting group adjustments attacks of any sort convulsions fainting headaches visual disturbances injuries or operations should be recorded

2 *Infectious diseases* Congenital or acquired syphilis i e discovered and treatment taken exposure to or attack of tuberculosis exanthemas with nervous symptoms vaccinia chicken pox measles scarlatina mumps diphtheria tonsillitis rheumatic fever or chorea in the past should be set down

3 *Intellectual development* education social adjustment Evidence of brightness or dullness as an infant or child age at beginning of school progress ever held back grade reached and age at and reason for *leaving or quitting* school Whether tired of it disgusted discouraged angry *unable to learn* too difficult trouble with teachers deportment record or truancy

Was there indifference apathy irresponsibility or rebelliousness toward education or overstudiousness bookwormishness or grinding? Estimate adult educational level *or* establish by intelligence tests *for* IQ Note religious affiliations whether fanatical or devoted indifferent or backsliding churchgoer

4 *Home life* duration happy or unhappy domestic relations? Congenial or separated parents family life troubles or worries? At what age were the home ties broken? Why? Domination? Emancipation? Adjustments? Nomadism wanderlust on the road or on a bum any charges of vagrancy scrapes jams close shaves arrests jailings convictions or *police record*? *Government service record* as a civilian or with the armed forces should be described in detail

5 *Sexual life* any problems worries precocious adolescent interest age of puberty or menarche reaction girl or

boy troubles, assaults or seductions? Abnormal practices, masturbation, homosexuality, love affairs, disappointments? Attitude toward marriage, spinsterhood, bachelorhood? Age at marriage, compatibility duration, separated deserted or divorced? Abortions, miscarriages children, financial stress? Moderate or excessive sexual desires, libido irregularities philandering promiscuity, prostitution potentia, manhood or manpower? Reaction to sexual experiences and ideas concerning effects of auto erotism are to be carefully inquired into

6 *Occupation,* attitude toward work age at undertaking work in family, for relatives or others? Partially or completely self supporting type or kind of job or position, few or many changes, reasons if any longest time at one job wages, specialization, ambitions advancement if none, why? Avocation hobby or pastime? *Percentage of time* out of work in five or ten years reason? Time on relief or charity?

7 *Social adjustment,* preponderance of friends or enemies made easily or with difficulty sociability Fair or unfair treatment any good or bad breaks or luck? Any one cause you trouble talk behind your back spy on you point you out work against you, hinder or help you? Is he eccentric a crank asocial recluse, hermit, "lone wolf" or paranoid?

8 *Toxic influences* Occupational poisons, illuminating gas lead, mercury, arsenic? **Tobacco** habit type and amounts used? Effects of first cigarette in the morning? *Alcoholic* beverages abstained from used in moderation or to excess? Intemperance age of onset of drinking cause for excesses kind of beverage and approximate amounts consumed, periodically or steadily dipsomania? What is reaction to alcohol exciting or depressing made suspicious with ideas of jealousy or hallucinatory episodes delirium tremens Korsakoff's psychosis with usual or unusual fabrications?

9 *Drug habituations or addictions* to morphine or one of its derivatives *barbiturates paraldehyde chloral hydrate* bromides or sleeping potions must be ruled out or established

MENTAL TRAITS OF LIFE'S MOODS

1 *Extrovert* Extremely self reliant confident, buoyant cheerful enthusiastic exultant sociable *intellectual im mature* Greatly interested in the opposite sex, aggressive, forward hale hearty well met domineering irrepressible cocky open noisy self centered or egocentric exhibitionistic overactive impulsive curt *persistent* high tempered antagonistic frank lighthearted proud and ingratiating

2 *Introvert* or Shut in Shy retiring self-conscious timid bashful frigid quiet naive secretive seclusive and unsocial squeamish inclined to daydreaming effeminate reticent showing fondness for the abstract and mythical *Odd habits* hobbies or pursuits Unusual religious fervor lack of in terest in or definite aversion to the opposite sex prudish or overparticular exhibiting a feeling of guilt or futility

3 *Maniacal* Overly *energetic unusually* lively ' peppy active talkative volatile sociable aggressive irresponsible cheerful optimistic grandiose able to accomplish great un dertakings Domineering irritable inclined to cruelty changeable lack of application *concentration* or persistence transient shift to lower levels of spirits

4 *Melancholic* Easily and habitually depressed dis couraged *serious* sad blue down in the dumps, *in a* rut gloomy worrisome morose sluggish constantly inhibited or *restrained* frequently hypochondriacal and persistently in different or vacillating fluctuating up or down unstable emotionally now sad *now glad*. Cyclothymic with suicidal thoughts

5 *Paranoid* This type of man is *suspicious* of all distrust ful unduly sensitive defensive schizoid with a tendency to misunderstand and be *misunderstood* yet alert aggressive inviting fair competition He feels discriminated against self important complaining of tough luck *bad* breaks cards stacked unfair deals Worry over talk behind the back or being spied upon pointed out by enemies Enemies pre dominate

boy troubles, assaults or seductions? Abnormal practices, masturbation, homosexuality, love affairs, disappointments? Attitude toward marriage spinsterhood bachelorhood? Age at marriage, compatibility, duration, separated deserted or divorced? Abortions, miscarriages, children financial stress? Moderate or excessive sexual desires, libido irregularities philandering, promiscuity, prostitution, potentia, manhood or manpower? Reaction to sexual experiences and ideas concerning effects of auto erotism are to be carefully inquired into

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reflex visceromotor or viscerosensory) Hyperesthesia hyper-
algesia polyesthesia anesthesia paresthesia in spinal cord
diseases Cough on irritation of vagus branch in the pharynx
in region of back part of eustachian tube Tics tremors
tetany spasmophilia fibrillary twitchings contractions con-
tractures convulsions tonic clonic epilepsy aura (details)
hysteria catalepsy disturbance of speech or paralysis (de-
tails) gastric crises

Gastrointestinal Disturbances Anorexia vomiting dys-
phagia abdominal distention distress ideas of function
disorders of internal organs bowel action rectal troub
(details)

Genitourinary Disturbances Dyspareunia vaginismu
premature ejaculation Bladder symptoms Paradoxical i
continence retention true incontinence

Neuromuscular Disturbances Lower extremities, loss
power changes in sensation tremors changes as above ga
tendency to reel or fall and direction Upper extremitie
loss of power or partial paralysis changes in sensatio
tremors changes in nails unusual perspiring

SUMMARY

Psyche or Mental Status Analyze personality extrove
introvert maniacal melancholic paranoic noting stream
mental or psychomotor preoccupation trends insight im
ination ideas affectation and mood emotional reactio
happy elated depressed and sad apathetic anxious p
plexed sensitive irritable unstable delusions and h
lucinations

Sensorium Evaluate mental capacity orientation me
ry general information grasp judgment cooperativeness
uncooperativeness loquaciousness or muteness

Past H in Diseases of the Nervous System — The p
sonal history may reveal the factors which have played
part in the development of the patient's personality
natal influences mother's health and emotional reactio
birth infancy feeding weaning dentition walking talk

C C in Diseases of the Nervous System.—Pains, aches, or weakness or easy fatigue in any part, headaches, dizziness, paralysis, palsy or muscle dysfunction, numbness, tingling, paresthesia, tremors, twitches, or spasms. Insomnia, overactive, sleepless, soporific or drowsy, visual disturbance. Addiction to alcohol or drugs. Noises in ears. Nervousness, forgetfulness, feeling of insecurity. Depression. Euphoria.

P I *in Psychiatric or Neurologic Cases.—Inquire into and* develop each symptom, especially paresthesia, pain, paralysis, trauma, business cares, overwork, fright, moral or physical shock, repressed desires, unusual interests, phobias, suspicions, obsessions, compulsions, or grandiose ideas. Trace in detail origin and development of experiences or imaginations.

Delusions of persecution or derogatory reference, of baneful influence, electrical power, strength, mental prowess, wealth, high birth, of somatic disorder, general health, function of internal organs, condition of blood. How do you feel? Do you hear someone's voice? Do you see things? What, where, when? Hallucinations, olfactory, auditory, visual, content and reaction to these, memory, orientation, state of sensorium, inclinations, trends. Describe symptoms in detail and in chronologic sequence.

Subjective Sensations. Referable to face or extremities. Numbness, tingling, formication. Visual disturbances, colors, rotation of person or surrounding objects, double vision. Side from which appear objects or persons. Vertigo or dizziness. Disturbances in hearing, tinnitus aurium. Taste, smell, appetite. Dreamy states, loss of memory, alterations of sleep, as insomnia.

Pain. Location and character, radiation in detail, e.g., in tic douloureux (trigeminal neuralgia), sinusitis (especially sphenoidal), or in otitis media. Pain in back with paroxysmal cough (aspiration of foreign body). Pain on pressure over sensory roots, nerve trunks or distribution (segmental

history of organic brain disease syphilis inflammation of the brain brain fever sleeping illness epidemic encephalitis chorea meningitis apoplexy epilepsy paralysis hydrocephalus poisoning wood or grain alcohol arsenic emetine, narcotics or barbiturates

Accidents with head or spine injuries knocked unconscious fracture of the skull Sequelae Compensation

F H in Nervous Diseases—The family history is most important in this type of case Only child oldest or youngest child nervously affected relatives as brothers sisters father mother uncles cousins aunts Paternal and maternal grandparents foster and step parents Separation divorces family pattern Marriage of blood relations consanguinity and the health of these individuals and their progeny Note congenital abnormalities genius talent brilliancy precociousness eccentricities deaf mutism or amaurosis Study familial disorders nervousness queerness violent temper alcoholism drug addiction criminality hysteria neurasthenia drunkenness dipsomania paralysis ataxia chorea Disease types in the family the time of appearance of paralysis ataxia chorea the gravity of the forms in various members and generations epilepsy insanity angioneurotic edema urticaria migraine Friedreich s ataxia cerebellar ataxia progressive muscular dystrophy Huntington s chorea Suicides with or without assigned cause

P.E in Mental and Nervous Cases—Examination in Psychiatric case by interview and observation

MENTAL STATUS

I Personality Traits Attitude Manners, and General Behavior—Note general demeanor *or reaction to examiner* conduct cooperation manner speech and posture facial expression which may show anxiety sadness exultation ecstasy depression aimlessness bewilderment restlessness changeability of mood spontaneous or under influence distrust conceit fear instability silliness or stereotype mannerisms Observe cleanliness tidiness or carelessness with

sphincter control, age and reaction to puberty or menarche, adolescence, health, sex life School history, overwork, over exertion, dissatisfaction, failure Work history, business cares or reverses, disappointments, rapid success or failure fright, worry, grief Recreation, rest, conduct, and behavior Habits sleep, night tremors, dreams, eating, coffee, tea, food fads

Mannerisms Note thumbsucking, nail biting, tendency to tantrums, obstinacy, run away, lie and steal repress interests in gangs in personal appearance and cleanliness, desirable or undesirable conduct as seen by parents and teachers Judge attitude, manner and character self conscious, timid dependent indecisive, self important, alert, economical, thoughtful, fore minded good natured, adaptable Any change? Circumstances, illness injury Consider occupational neuroses, eyestrain, writer s cramp or telegrapher's spasm, painter s lead neuritis a wrist or foot drop or encephalopathy Caisson disease (the bends)

Alcoholism, neuritis delirium tremens, Korsakoff s psychosis Drug addictions morphine, heroin, cocaine cannabis indica (' hashish ' muggles, 'reefers or marihuana cigarettes) ether, chloroform chloral veronal Use of any other narcotics or poison should be recorded

P H in Nervous Diseases —It is important to note the occurrence of other diseases or injuries with or without resulting palsies paralyses convulsions, or coma at birth or later Condition and date of closure of fontanelles growth curve dentition time of beginning to walk and to talk symptoms at puberty and in adolescence, in adult life or in senility Describe attacks of loss of mind or memory double vision fainting or coma

Inquire as to **functional disorders** as bed wetting enuresis strain nightmares walking in sleep somnambulism fainting nervous exhaustion or break down rundown use of nerve tonics or sedatives sleeping potions in what quantity and over what period of time Temperament disposition changes noted by patient, by relatives or by friends Note

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evidence of paralytic or other dilapidation, and adjustment to the ward and staff Describe accurately and discriminately Write brief descriptive statements of actual attitudes *motions or expressions so as to avoid the empty use* of the vocabulary

II **Stream of Mental Activity**—Examine directly so as to get as rapidly as possible a spontaneous account of the patient's own view of the situation Note talk spontaneity, coherent or incoherent? speech, rapid, slowed vague illogical or schizoid? Answers to questions What is your name? What are you (origin and occupation)? Do you realize where you are? Add if necessary What place and locality is this? What would be your address? Do you know who the people here are and what they are? (physicians, nurses and attendants)

After the situation is ascertained and has been sufficiently clarified and introductions have been completed a statement of the purpose of the interview should be made Get an account of the developments leading to the examination, or the commitment Has there been any trouble or change in you? Up to when were you quite yourself or has everything been all right? How did the change come and what has happened since? When did it affect your work? What led to your coming here? How did you come here? What way? With whom? When? Time of day and how many days ago? Can you give an account of the admission and what was done for you first? Were answers relevant? Visions? Hallucinations? Overproductivity with flight of ideas and distractability? Diminished productivity with retardation mutism echolalia or palilalia? Thought content?

Psychomotor Activity—Increased or decreased? Mannerisms stereotypism echopraxis suggestibility negativism waxy flexibility?

III **Emotional Reaction Effect and Mood**—Begin with the general question How do you feel? If necessary make more specific, e g Have you ever been blue discouraged down in the dumps and unable to snap out habitually gloomy

or morose, sad or moody? Are you afraid, fearful, anxious? Are you frequently or easily depressed, happy, elated or apathetic? Has it ever been that you cared not whether you lived or died? Have you ever contemplated suicide? Have there been any times in your life when you have been unusually peppy, energetic, enthusiastic and able to tackle big things?

Also describe objectively: dissociation, ambivalence, stability and irritability, worries, anxieties, tension, anger, apathy or indifference. If necessary seek clues by personal individual observation. Have you had any peculiar or unpleasant experiences? Does everyone treat you well? Have you any reason to complain of anything or anybody?

IV. **Special Preoccupations, Delusions and Hallucinations (Trend Reactions).**—Undercurrents may be probed and anxiety revealed by evidence of concealment. **Delusions**: Any unpleasant or peculiar experiences? Call for definite additional inquiry. Troubled by imaginations? Unusual strange thoughts? Does everyone treat you well? Have you any reason to complain of anything or anybody? Do you do anything queer or strange in talks, thoughts *or actions*? How do you account for it? Are there any imperative words, thoughts or acts? Is there preoccupation, pseudospontaneity and passivity?

Expansive Delusions: Do you have great strength, power, wealth, high birth, grandeur or beatitude?

Delusions of Reference: Do people laugh at you, speak about you, do things with special reference to you? Watch you? Spy upon you?

Paranoid Delusions: Have you been fairly treated? Wronged? Persecuted? Robbed or poisoned? Are you inclined to see meaning or motives in things done?

Delusions of Influence: Have you been under any special evil influence, mind reading, e.g., hypnotism, mental spells, electrical effects, machinations? How is this done? By whom? and Why? Is there a plan in this? What makes you think so? Is systematization retrospective falsification?

Somatic Delusions and Hypochondriasis May be brought out by questions concerning patient's health and general strength, functions of internal organs, bowel action, condition of blood, efficiency of the circulation

Obsessions, Phobias, and *Compulsions* Describe in detail trace origin and development

Hallucinations Do you hear noises or definite sounds plainly or clearly? Voices? Whose voices? etc What starts the talk? Is it worse at times? Do they affect surprise or scare you? What do they say to or about you? Do you respond? Does your tongue move or is it all thought? Can you stop the talk of others or can others by speaking or inattention stop your talk?

Do you see things? What? Where? When? In daylight or darkness with eyes open or closed or focused in any special direction? Do the visions move fit in seem natural, transparent? Can they be provoked by pressure on eyes or gazing at blank?

Are there any hallucinations of smell taste, contact? Are there touch visual or organic sensations?

Are there illusions and misinterpretations? Is there any organic foundation for sense deceptions? Any pseudo hallucinations recognized as imaginative? Hypnagogic or reflex hallucinations? Has patient insight into the hallucinations at the time or afterwards? In case of peculiar thoughts, do the sense deceptions of various senses cooperate as in dream states or hallucinations of the alcoholic epileptic and delirium conditions? Do they depend on special effects or episodes?

V **Sensorium Mental Grasp and Capacity —**

1 *Orientation* as to time place and personal identity Repeat or restate for confirmation if previously given

2 *Memory* (Especially important in organic psychoses)

a Remote Past (Use questions that can be checked, such as) How old are you? When were you born? How old were you when you started to school? For how many years

did you go to school and how far did you get? When married? How long? etc

b Recent Past Home address? When and how did you come to hospital? What happened when you first arrived in hospital? etc Where were you yesterday? Where were you Christmas? Thanksgiving? Independence Day?

c Immediate Past Events in past twenty four hours? How many meals have you had today? How often did you urinate? Did your bowels move? When did you last defecate?

d Retention and Recall How long does the patient remember statements made in the early part of the interview? Introductions or names of staff conversation incidents parts of body discussed signs colors Recite the alphabet, the Lord s Prayer poetry months days numbers especially 387

Repeat reversed 6528 or 4937 (7th year)
Repeat forward 31759 or 42385 (9th year)
Repeat reversed 31879 or 69482 (12th year)
Repeat forward 2183439 or 9728475 (14th year)
Recall 375 Oxford street after 5 minutes

3 *Grasp of General Information* From sphere of patient s experience places distance routes of travel War current events name of president governor mayor last five presidents largest cities principal rivers wars of the century

4 *Calculation* Time counting 1 to 20 forward and backward Begin with 100 and subtract successive 7 s Simple multiplications additions count coins note time required effort and general reaction

5 *Reading Writing* and *Speech* (Test phrases Writing specimen) Describe writing and speech constrained or free Have patient read cowboy story and note if patient gets meaning and can tell the story

A cowboy from Arizona went to San Francisco with his dog which he left at a friend s while he purchased a new suit of clothes Dressed finely he went back to the dog

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whistled to him, called him by name, and patted him However, the dog would have nothing to do with him in his new hat and coat but gave a mournful howl Coaxing was of no avail, so the cowboy went away and donned his old garments whereupon the dog immediately showed his wild joy on seeing his master as he thought he ought to be

6 *Judgment* Is patient able to make reasonable plans and to give due value to practical considerations in discussions of abstract and complicated topics? What is his judgment concerning his situation? Intelligence rating as indicated is of especial value in children Make a rough estimate of I Q by tests

VI **Insight**—Insight concerning his *physical and mental* health or efficiency financial status and plans Any admission of being sick or nervous? Realization of the nature of the disorder etc Does patient appreciate errors made defects of memory, or other failures of capacity?

Mute or Uncooperative States

1 *General Reaction* and *Posture* and *Attitudes*—Describe general attitude and behavior of patients any unnatural movement or expressions General response to examiner to nurses and to the situation Somnolent soporific comatose or alert uncooperative obstinate indifferent

2 *Emotional Responsiveness*—Does patient cry or laugh or show other unusual reactions?

3 *Reaction* to *What* is *Said* and *Done*—Irritable? Cooperative? Record productions of patients Does he obey commands? Reaction to pin prick on skin and attempt to touch pinhead to conjunctiva Reaction to gag reflex

4 *Somatic*—Skin general appearance Temperature pulse, respiration blood pressure and any other outstanding somatic findings

5 *Facial Expression*—Apathy placid smiling *lack of expression*

6 *Eyes*—Position and movement of eyeballs deviation, strabismus type? Eyes open or closed Reaction of pupils Condition of retinae optic nerve head and blood vessels

7 *Muscular Reactions*—Muscle tone power abnormal muscular movements negativism resistiveness Reflex reactions superficial or deep

8 *Speech*—Rapid slow confused dysarthria aphasia none dumb or deaf

9 *Writing*—Specimen if patient can write

10 Coma duration depth Rapidly survey the whole critical situation Note the patient's position facies skin color Look for pallor cyanosis floridity jaundice and rash Convulsions local generalized Frothing at mouth biting of tongue loss of sphincter tone Odors of alcohol phenol etc acetone and ammonia Rigidity of neck Brudzinski and Kernig signs paralyses Rate and character of *respiration* and heart action Blood pressures venous pressure phlebogram electrocardiogram Establish if possible what precipitated the attack and what symptom inaugurated it

MODERN PSYCHIATRIC DIAGNOSIS

THE MENTAL STATUS MUST BE ESTABLISHED FOR ALL CASES DIAGNOSED AS PSYCHONEUROSES IN PRACTICE

Professor Franklin G Ebaugh requires an adequate survey of each patient and a record of these data

1 The earliest manifestations of symptoms in the life history of the individual and the relation of these to complainants parents siblings wife friends or employer should be established and dated The circumstances of onset or provocation or reawakening of symptoms should be stated

2 Verbatim complaints should be listed and written out in full with dates places circumstances associated with each complaint There may be ten or more complaints all of which should be thoroughly tracked down until the purpose of the patient s flight into illness is clear Key personality states should be sought for through such clues as tension anxiety and depressive states

3 Each patient with a diagnosis of psychoneurosis or a "functional disorder" should have a brief (100 to 500 words) exposition in his chart of the origin, growth, and present status of the condition (pathogenesis) This is often best accomplished by citing a brief review in narrative (story) form of the patient's personality *regression into illness* through utilizing such methods as imitation, identification, apathy, excitement, oversensitivity, depression intimidation of others resistance to authority fatigue discouragement, irritability, passivity, aggressiveness seclusiveness, excessive orderliness and overconscientiousness cruelty, selfish greediness sympathy seeking, martyr attitude, excessive religiosity, boastfulness, resentfulness paranoid hypersensitivity with projection interpretations and self condemnation

Note alibi whine inferiority feeling excessive desire to achieve goals not feasible or beyond ability to gain or maintain flight into nostalgia reminiscence carping criticism conversion of dissatisfaction into somatic symptoms (all systems or organs may be involved establish correspondence in time between acute phases of complaints and internal and external stress) Insomnia reversal of sleep rhythm fainting convulsions anorexia bulimia diarrhea constipation weight loss decreased energy and work ability nausea vomiting dysphasia palpitation tachycardia sighing respiration gastric or colonic dysfunction (specify details) gambling alcoholism is sedative escape or defense compensations through art music or mechanics perversity or criminalism

4 (a) Note that many cases with such complaints are relatively simple tension or anxiety or depressive states in direct reaction to an intolerable situation Good leadership by an intelligent physician will often correct the situation with restoration of the patient to duty if the basic external conflict is thoroughly investigated Often neurosis need not be diagnosed and the term *reactive tension state* psychologic disorder or fatigue state is more adequate

(b) Some neurotic symptoms are relatively direct conversion phenomena in relation to stress (aphasia globus hys

terical paralyses amblyopia tremors astasia abasia etc) These patients are usually relieved of their symptoms if they are given sufficient reassurance that their lives and persons are not in danger

(c) Many of the symptoms are merely psychologic concomitants of intense chronic underlying conflicts which cause continuous stimulation of the organ system involved Irritable colon neurasthenia gastrica inconstant hypertension functional asthma neurodermatitis ulcer colitis etc

5 *Personality Description* With study and practice many physicians can soon describe succinctly and picturesquely the type of individual who is sick Remember it is the man and his emotion which are causing symptoms In order to help him it is necessary to work with him at the level of his trouble Symptomatic medical treatment with sedatives vitamins hormones placebos etc will not relieve a man of his worries Find out why he is afraid or angry or depressed even in disguised form and help free him from the threat to his well being

6 Diagnostic formulation in terms of data accumulated te re psychoneurotic reactions to duties stresses and strains in view of the life history) can then be made

Professor Franklin G Ebaugh has recognized that the present terminology of neuropsychiatric disorders is unsatis factory He has therefore recommended that attempts b made to get away from organ static descriptive prognostic and socially derogatory concepts or insinuations especiall as they pertain to the prevalent psychoneurotic and psycho somatic disorders From this point of view the followin tentative classification of psychiatric disorders on physiologi and psychologic bases has been developed

A Physiologic reactive tension states

(1) Musculoskeletal reactions

(2) *Visceral* (smooth muscle) reactions

(3) Sensory reactions

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2 Description of the individual s make up summary of the hereditary and birth influences physical properties and modifying factors intellectual endowment and the inter reaction of the instinctive drives with the home school religious occupational and social environment

3 Enumerate the causative situations (organic or psychogenic) to which the patient has reacted

4 List the characteristics of the reaction (summary of positive findings in the examination) Next attempt to explain psychopathologic mechanisms involved

5 Make a diagnosis of reaction type with reasons

6 Recommend immediate and future therapy

7 Evaluate the prognosis from standpoint of duration and symptoms of illness modifiability or unmodifiability of the situations and personality make up of the patient

PSYCHIATRIC CONDITIONS

A So-called psychoneuroses anxiety *tension depression* hysteria obsession compulsion states neurasthenia hypochondriasis alcohol and drug addiction certain posttraumatic states so called psychosomatic syndromes including functional tetany certain types of anorexia asthma skin disorders and gastrointestinal and circulatory disturbances stammering enuresis and nightmares

B Psychoses manic depressive psychosis schizophrenia (dementia praecox) certain paranoid states those associated with organic cerebral disease including toxic infectious nutritional deficiency exhaustion involutionary or senile degenerative diseases

C Psychopathic personalities —

1 Emotional (emotionally unstable cyclothymic euphoric) moody depressed (*melancholic* belligerent or irritable) convulsive (epileptic)

2 Schizoid (queer asocial apathetic or torpid) paranoid

3 Characterologic (irresponsible immature antisocial criminal delinquent habitual offender incorrigible ego

B Excitatory reactive tension states
  (1) Anxiety reactions and panics
  (2) Hypomanic and manic reactions

C Inhibitory reactive tension states
  (1) Depressive reactions
  (2) Stupor reactions

D Distorted reactive tension states
  (1) Schizophrenic reactions
  (2) Paranoid reactions

E Symbolic and phobic reactive tension states (compulsive or obsessive reactions)

F Sociologic reactive tension states constitutional psychopathic states (difficulties are with people and with social conformity)

Summary Formulation—Diagnostic Statement and Therapeutic Suggestion

The case study presents a picture of the whole individual and enables the student to apply the genetic dynamic approach in the consideration of the mental disorder This cross section of human behavior provides the necessary material for the formulation of the reaction type and the longitudinal survey of the personality development shows how past experiences pattern the subsequent expressions and behavior of the illness The student should review the case to assemble all the physical, intellectual constitutional, and developmental factors in their proper relationship to the individual make up The situations organic or psychogenic in nature, to which that individual reacts will furnish a basis for the evaluation of the symptoms the prognosis and the therapeutic approach to each case

Each case history should include the following summary with the identifying data of name age occupation and marital status

1 Brief description of the complaint and summary of the symptoms of the present illness

[illegible]

INDIVIDUAL [illegible]
(What [illegible])

A PHYSICAL
1 Body type
[illegible]
3 [illegible]
4 [illegible]

B INTELLECT
1 [illegible]
Intelligence [illegible]

C HABITS
1 [illegible] bit [illegible]
tion
[illegible] and [illegible] bit
[illegible] table
4 [illegible]

D INSTINCTS
1 Self preservation
Race preservation
3 Herd

E EMOTIONS
1 [illegible] tion [illegible] to
Dri[illegible]
3 Stability

SITUATION
(What [illegible] to)

A TOXIC FACTOR
[illegible]
3 Al[illegible]

B ORGANIC FACTORS
Definite [illegible] changes [illegible]
[illegible] neurol [illegible]
[illegible]

C PSYCHOGENIC FACTORS
[illegible] understanding [illegible] economic stress and [illegible]
[illegible]
Internal Disturbance [illegible]
[illegible] life [illegible] tion to break [illegible] etc

REACTION { Adjustment / No [illegible] behavior / Maladjustment— resulting in

A SEVEN MAIN TYPES OF PSYCHOSIS
1 [illegible]
a [illegible]
b [illegible]
c Cerebral [illegible]
d [illegible]
[illegible]
tion Type (T[illegible])
a Al[illegible] psychosis
b [illegible] due to drugs and other [illegible] toxins
c [illegible] with somatic ill[illegible]
3 [illegible] Reaction Type
4 Affective Reaction Type
a [illegible]
b [illegible]
c Anxiety
5 [illegible] Reaction Type
a Anxiety [illegible]
b Hysteria
Obsessive Compulsive [illegible] Reaction
6 [illegible] Constitutional Reaction Type
a Psychopathic inferior
b Mental deficiency
7 [illegible] Reaction Type

B RECOMMENDATIONS Dependent upon Modifiability of Personality or Modifiability of Situation or Modifiability [illegible]

C RESULTS
After treatment—1st yr [illegible] yr 3rd yr
4th yr 5th yr

D PROGNOSIS

DIAGNOSTIC GROUPING OF REACTION TYPES OF CHILDREN

A Reactive Behavior Disorder Group
Results from lack of fulfillment of emotional needs of the child
1 Aggressive Reactions (1 rot st)
[illegible] stealing temper tantrums etc
[illegible] Reaction
[illegible] timidity etc
Day dreaming [illegible]
3 [illegible] (obstinacy) Reactions
[illegible] refusal to [illegible]

B Mental Deficiency and Endocrine Group

C Behavior Disorders Due to Toxic or Organic Factors as Specific Disease [illegible] Convulsive States etc

D Psychoses as in Adults.

tistic, egocentric, crank, sensitive paranoid nomadic, pathologic liar, or unusually timid or meek)

4 Hypersexual

D Amentia —

1 Primary intellectual deficiency, constitutional feeble mindedness imbecility, idiocy

E Malingerers —

1 Those who feign physical as well as mental disorders These warrant careful investigation as a certain number are psychopathic personalities

at 5 cm below olecranon with arm extended arm over the biceps with a m extended ankle just above malleoli, calf length of feet and of hands size of shoes and of gloves

Reflexes

Reflexes Pupillary —Consensual and direct light reaction (active sluggish stabilized immobile) A normal reaction in accommodation but not to light Argyll Robertson C N S syphilis tabes dorsalis taboparesis or general paresis Con junctival areflexia is functional scleral or corneal organic Chvostek s sign facial twitch on tapping the facial nerve and Trousseau s sign spasm of the hand muscles on apply ing a tourniquet or blood pressure cuff to the arms are evi dences of tetany

Superficial —Eyelid palate gag reflexes Abdominal up per middle and lower Epigastric note both sides whether negative or not Cremasteric (boring finger into Scarpa s triangle) Erector spinae

Deep Reflexes —Achilles tendon (ankle clonus) radial periosteal biceps triceps pectoral knee or patella

Physiologic and pathologic reflexes with fluctuations within wide normal limits are dependent on emotional state age habits occupation exercise rest Re enforcement methods ma be necessary Note exaggeration inequality diminu tion abolition disproportion and dissociation (as when tendon reflexes are present and skin reflexes are absent or vice versa) Minimum stimulation Maximum stimulation with all re enforcement Have parts exposed and completely relaxed and reaction controlled by feel of the examiner

Pathologic reflexes and signs after third month of life indicate a pyramidal tract involvement Great toe ex tension plantar (Babinski s) tibial (Oppenheim s), gas trocnemius (Gordon s) external malleolus (Chaddock s) Flexion of terminal phalanx of the thumb and some adduction on snapping the nail or pinching the index or middle finger (Hoffmann s)

Neurologic Examinations

P E in Neurologic and Mental Cases —Detailed general physical examination is necessary in order to insure an adequate study of the nervous system This is especially difficult in uncooperative or mute states

The **mental status** or condition, the general psyche, is important and where gross abnormalities are noted a psychiatric study is indicated The disposition attention, memory orientation clearness, the grade of **intelligence**, the **emotional** state, hysterical, maniacal, exalted or depressed, apathetic or stuporous, lethargy, narcolepsy, coma, or special defects as delusions of grandeur (optimistic) or persecution (pessimistic), hallucinations and hypochondriasis should be recorded and investigated as to attitude, behavior, and responses

Body in General —Note general appearance, frame anthropologic make up abnormalities

Variety of Physique or William H Sheldon Types and Components **Ectomorphic Mesomorphic Endomorphic** Habitus asthenic hyposthenic sthenic or hypersthenic (See Figs 1 to 4 pp 68 to 71)

Gross stigmata of deviation or degeneracy as asymmetry of skull hairline face palate, ears eyebrows Adherent ear lobules, prominent anthelix Darwinian tubercles Trophic disturbances Expression placid apathetic happy

Anthropometric measurements for special cases Body weight, **standing heights**, to vertex to upper end of sternum to xiphoid notch, to anterior superior spine to top of symphysis pubis, to mid kneejoint Length of arm (acromion to tip of middle finger with arm extended forward and the palm turned inward) Bertillon measurements

Circumference of head (a level of ciliary ridges and external occipital protuberance neck at mid larynx level) chest at fourth rib level on deep inspiration and expiration, waist on deep expiration and inspiration wrist forearm

Muscle tonus may be increased normal decreased or absent spastic or flaccid paralysis or paresis

Abnormal involuntary movements may be merely twitchings fine coarse regular or irregular

Tremors spontaneous tonic or clonic spasms choreiform or athetoid incoordination may be present

Test Coordination station right or left handedness finger to nose finger to thumb pointing pass pointing heel to knee and down tibia succession rebound posture holding Romberg s and standing on one foot

Incoordination ataxia may be present in cerebral cerebellar spinal or peripheral nervous disease abnormal associated movements

Skilled acts Changes in gait composition of action swallowing and sphincter control may be tested out

Writing (voluntary by dictation or in copying) Speech (scanning dysarthria anarthria or aphasia) should be thoroughly investigated

Mechanical and electrical irritability may be increased normal decreased or absent in muscles or over nerve trunks

Sensory Status — Use sensation charts for abnormal findings Follow scheme of Head and Holmes (Figs 7 and 8 pp 14 and 73)

Distribution of disturbance focal segmental peripheral organic or functional

Stereognosis—ability to name object felt Sense of position at joints (muscle tendon joint sense)

Sensation —Objective tests Touch gentle or moderate pinching pricking differentiation between point and head of pin electric current hot or warm and cold or cool test tubes Deep sensation point sensation dysmetria (dividers)

Tactile or touch *perceptive* discriminative sharp dull pain Temperature hot warm cold cool vibratory senses

Pressure Cold and heat localization of sensations Stereognosis muscle sense weights

Passive motion Sense of position of part

State exactly the stimulus used

Nuchal rigidity signs Kernig's signs (meningitis), and Brudzinski (meningitis), Lasegue's (also in sciatica), and Abbott's (differentiate hip joint disease) signs

Motor Status.—Position **Gait** Arms and head on toes on heels backwards on a line, normal primarily associated movements of trunk, shifting weight to alternate extremity **Hemiplegic** stiffness with dragging of affected leg (capsule lesion) **Spastic or paraplegic,** stiffness with dragging of both legs with some mechanical support (cord lesion) **Monoplegia** paralysis of one extremity (cortical lesion)

Ataxic gait due to loss of sense of motion and position of legs and feet, rapid overaction incoordination of trunk and extremities uncertainty broad base striking heel first, eyes on ground Tabes dorsalis Cerebellar ataxic gait marked overaction of trunk movements exaggerated swaying tumbling gyrating reeling staggering like a drunken person

Steppage gait, hyperflexion of the knee with dangling and dropping of the toes

Gait of weakness, stoop shouldered shuffling along slowly and unsteadily as in paralysis agitans in senility after toxic neuritis, or any protracted serious illness

Gait of functional disturbances is characterized by the absence of all voluntary effort with the affected part or parts as in hysteria

Local Manifestations of Motility Disturbances.—Change in attitude of a part or of the whole is evident except in instances of very slight degrees of weakness only Note alteration in the manner in which and the force with which movements are made and involuntary unnatural acts Note muscle status as wasting which may be general or limited to particular groups Test muscle power at each joint

Variation in strength especially with disproportion to the degree of muscular development may be elicited

Diminution or absence of visible and palpable muscle contractions when given movements are resisted Resistiveness Negativism

9 Positions
  By imitating with the sound limb the position of the affected limb By pointing with the sound limb
  Measurement of defect by Horsley s method

10 Passive movement
  Appreciation of movement
  Recognition of direction of movement
  Measurement of the angle of the smallest movement which can be appreciated
  Falling away of the unsupported limb when the eyes are closed

11 Active movement
  Imitation of movement by sound limb
  Ability to touch known spot
  Measurement of the defect by Horsley s method

12 Weight
  (a) With the hand supported
    Recognition of differences in weight applied successively to one hand
    Appreciation of increase or decrease of weight
    Comparison of two weights placed one in each hand
  (b) With hand unsupported
    Comparison of two weights placed one in each hand
    Recognition of differences in weights applied successively to one hand

13 Size Difference threshold
  Distinction of the head of a pin from the point

14 Shape (two-dimensional)

15 Form (three dimensional)
  Recognition of common objects by their form

16 Texture

17 Dominoes Ability to count points by touch

18 Consistency

Scheme for the Examination of Sensibility

A Spontaneous Sensations Pain, numbness, tingling
Position of the limb Idea of the limb

B Loss of Sensation

1 Touch
  (a) Light touch Threshold with von Frey's hairs
    Cotton wool on hairless and hair clad parts
  (b) Pressure touch
    Threshold with the pressure esthesiometer

2 Localization Naming the part touched
Henri's method, as modified by Head and Holmes

3 Roughness
Threshold with Graham Brown's esthesiometer, sand paper tests discrimination of relative roughness

4 Tickling and scraping on soles and palms
Cotton wool rubbed over hair clad parts
Light scraping with the fingernails

5 Vibration
Loss or diminution of sensibility to tuning fork stool
Alteration in the character of the sensation evoked

6 Compasses or dividers
Points simultaneously applied
Points successively applied

7 Pain
  (a) Superficial pain Pin prick
    Threshold with the algesimeter
    Reaction to measured painful stimuli
  (b) Pressure pains
    Threshold with the algometer
    Reaction to painful pressure

8 Temperature Threshold for heat and cold
Effects of adaptation on threshold Affective reactions
Discrimination of different degrees of heat and cold (a) to extreme degrees, (b) to warmth

jective cold hands and face Objective skin color temperature moisture and surface changes

Cerebellum Subjective sighing yawning vomiting and urinary disturbances subjective urgency objective incontinence Inability to walk without staggering Objective ataxia finger to nose test etc hypotonia atonia astasia weakness asthenia dizziness vertigo disturbance of equilibrium (tendency to fall to one side affecting attitude as well as gait) Volitional tremor Pointing off Ocular disturbance nystagmus rebound phenomenon adiadokokinesis

Pituitary body and pineal gland (See endocrine section for signs of hypopituitarism hyperpituitarism and pinealism) Bone changes skeleton skull face palate hands and feet skin pigment hair and fat distribution Changes in genitalia

Head—Shape of skull or calvarium in detail *dolicho* or brachycephalic microcephalic steeple dome or *Turmshadel* oxycephaly macrocephaly hydrocephaly bosses square head rickets congenital syphilis *Craniotabes* nodules myeloma Depressions from trauma tenderness murmurs (arteriovenous aneurysm)

Facies Motility of facial muscles in laughing wrinkling *forehead* *whistling* showing teeth protruding the tongue movements of tongue soft palate uvula and jaw Twitchings tics *Symmetry* of wrinkles of the forehead of the halves of the face of nasolabial folds of eyelids *of width of palpebral fissures* *of* prominence and tension of eyeballs of extraocular movements direction of vision (strabismus squint nystagmus) of pupils and their direct and consensual reaction *to* light and accommodation and convergence Conjunctivitis conjunctival and corneal reflexes Smiling or frowning

Nose Position of *nasolabial* folds movements of nostrils or alae nasi Anosmia in fracture or tumor in anterior fossa

Mouth Symmetry of oral fissures straight or crooked movements of lips as in whistling laughing blowing or

19 Testicular sensibility Light pressure
Painful pressure
20 Sensibility of the glans penis

Gross Localization

Cerebral Cortex Frontal mental condition Subjective memory, disposition Objective orientation as to time place and person habits tremor of hands abdominal reflexes *Parietal* motor convulsions twitching intention tremor weakness or Jacksonian epilepsy Paralysis flaccid or spastic (describe localization) cutaneous sensibility, sensory paresthesia touch pain temperature muscle sense visceral sense Astereognosis atopognosis *Occipital* subjective sensation of vision hallucinations of light homonymous hemianopsia *Temporal* hippocampal or uncinate gyrus Subjective sensations hallucinations of hearing smell parosmia taste and dreamy states hemianopsia median or lateral parts of an object lost sight of

Centrum semiovale Paralysis sensory disturbance aphasia neighborhood symptoms distal symptoms shock symptoms Diaschisis

Corpus striatum Wilson's disease Parkinson's disease Huntington's chorea *Corpus callosum* Apraxia

Thalamus Hemianopsia thalamic syndrome Hypothalamus metabolism Nothnagel's syndrome

Internal capsule Hemiplegia hemianesthesia

Crura Spastic paralysis crossed paralysis ataxia oculomotor paralysis hemianopsia disturbance of hearing Weber Gubler syndrome

Corpora quadrigemina Pupillary reaction changes auditory disturbance affection of mastication ataxia

Pons and Medulla Crossed motor or sensory paralysis spastic paralysis abducens (sixth) or hypoglossal (twelfth) paralysis conjugate paralysis of eyes anarthria deglutition disturbances tetraplegia dissociated sensory disturbance Respiratory disturbances Vasomotor disturbances Sub

V Trigeminus —

Subjective Evidence of paresthesia and anesthesia of face cornea conjunctiva nasal mucosa tongue and palate

Objective Sensory sensations pain touch and temperature of face anterior two-thirds of tongue and palate Trophic changes in skin cornea nasal mucosa and tongue

Secretory Diminutive tears nasal mucus saliva and sweat

Reflexes Loss of corneal sneezing and palatal reflexes

Taste sense Test substances without odor as sweet sugar solution salty sodium chloride solution sour weak acetic acid solution and bitter quinine solution

Motor Mastication Test for weakness of masseter and temporal muscles Note deviation of the jaw to the right or left

VI Abducens —

Subjective Homonymous diplopia on looking toward affected side

Objective Convergent squint face turned to paralyzed side limitation of movement outward

VII Facial —

Subjective Inability to close one eye or to whistle

Objective Paralysis or atrophy of any part of face scalp eyelids lips or cheeks Presence asymmetry of nasolabial folds conjunctivitis herpes or perspiration anomalies epiphora blowing out of cheek no blinking

VIII Acoustic —

Subjective Hearing in general for near or distant high pitched sounds Whistles bells tinnitus roaring

Objective Otoscopic examination with aural speculum

Cochlear Watch tick heard at what distance from each ear Air and bone conduction with tuning fork

Vestibular Rotation tests caloric tests Barany tests

chewing Vault of palate *Tongue* Position, protrusion, atrophy, hypertrophy, tremor, fibrillary twitching Soft palate symmetry Swallowing act, any difficulty Abnormal or absent gag reflex Attitudes about the head

Speech—Stammer, lisp dysarthria, anarthria aphasia Scanning multiple sclerosis monotone (paralysis agitans), falsetto dialect, idioglossia, nasal (bulbar or palatal paralysis)

Cranial Nerve Functions in Detail

I Olfactory—

Subjective Disturbance of smell reduction absence or perversion, peculiar odor, hallucination

Objective Test sense of smell with common well known odors from substances as coffee, tea, vanilla, vinegar, whiskey alcohol, ether, cologne, asafetida

II Optic—

Subjective Eyesight in general for near and distant objects Blurring on reading eyestrain, headache, effect of glasses

Objective Vision and color fields scotomas hemianopsia determined roughly by *finger tests* Ophthalmoscopic study of fundi

III Oculomotor—

Subjective Diplopia crossed and vertical

Objective Face turned to sound side Ptosis slight *exophthalmos divergent squint* nystagmus lid lag Mydriasis pupillary reflexes to light and in accommodation lost Eyeball almost immobile or conjugate deviation

IV Trochlear—

Subjective Giddiness on going down hill or down stairs Diplopia homonymous and vertical

Objective Extraocular movements unable to turn eye down and out Squint upward and inward

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Subjective Evidence of paresthesia and anesthesia of face cornea conjunctiva nasal mucosa tongue and palate
Objective *Sensory* sensations pain touch and temperature of face anterior two thirds of tongue and palate Trophic changes in skin cornea nasal mucosa and tongue
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IX Glossopharyngeal —

Subjective Difficulty in talking and swallowing

Objective *Taste sense* posterior third of tongue and soft palate Test is outlined above Tongue position, *protrusion, atrophy, hypertrophy, fibrillary* tremor

X Vagus —

Subjective *Dizziness, fainting attacks, irregular pulse* vomiting, vagotonia

Objective *Pulse slow rate bradycardia irregular* rhythm of sinus arrhythmia Oculocardiac reflex exaggerated Ocular or vagus pressure stopping heart temporarily reproducing symptoms of vagotonia or no reaction Respiration rate and rhythm Speech quality, alterations Laryngoscopic examination vocal cords Laryngeal muscles tumors or ulcers Velum soft palate symmetry and movement Salivary flow

XI Spinal Accessory —

Subjective Drooping and weakness of one or the other shoulder

Objective Atrophy of either shoulder girdle Muscle power in the sternocleidomastoid and trapezius

XII Hypoglossal —

Subjective Twisting of the tongue

Objective Tongue position protrusion equality and unison of movements tremors coarse or fine fibrillary twitchings

Body in General in Neurological Cases

P E —Skin Sensations Segmental (Figs 7 and 8 pp 74 and 75)

Head —Eyes pupillary conjunctival and gag reflexes

Neck —Movement to right or left resistance or stiffness on turning abnormal attitude Meningitis (Brudzinski)

Cervical vertebrae arthritis deformity caries (Pott's) Thyroid gland goiter type hypertrophy or atrophy

Thorax.—Dorsal vertebrae curvatures normal or kyphosis acute angular caries (Pott's) scoliosis Flexibility or rigidity or tenderness of spine

Respiratory Organs.—Is there any difficulty in breathing permanent or in attacks? Mouth open? Any restriction or persistent on deep inspiration? Any cough or expectoration (where from)? Nose and larynx? *Shape and motility of chest?* Inspection of lungs frequency of respiration dyspnea Respiratory movements (compare both sides in deep inspiration and expiration) Palpation expansion (free or restricted) symmetry atrophy fremitus Percussion tympany dullness location other abnormalities Auscultation pleural friction and abnormal breath sounds or rales

Circulatory Organs.—Is there any palpitation? In attacks? Due to what? Subjective recognition of arrhythmia? Dyspnea? Edema? Any attacks of pain or anxiety?

Heart.—The impulse seen and felt in what area? Relative dullness (right upper and lateral borders)? Give measures from median line beside the statement as to nipple line In pathologic cases draw a chart Sounds and bruits (abnormalities)? Pay special attention to muffling of the first sound to duplication to change of murmurs in inspiration and by position and to rhythm and accentuation and indicate graphically abnormal sounds and murmurs

Digestive and Abdominal Organs.—**Stomach** sensations localizations Movable tenth rib? Digestion? Movements of bowels Any subjective feeling of obstruction? Form of intestines? Flatulence and distention? Hemorrhoids and fistulas?

Liver outline spleen floating kidney? Anus and rectum Frequent involuntary contraction and evacuation *Defecation* Is the patient conscious of evacuation?

Urinary Apparatus.—Organic reflexes and their control Micturition Bladder Delay of micturition Dribbling from empty bladder from distended bladder Peculiar sensations on micturition

Sexual Reflexes—Anesthesia of testicle in pithiatism or hysteria In masturbation—the reaction to it, is the most important point

Genital Organs—Scars of genital organs with accurate statement of origin Evidences of abnormal function or practices In women evidence of menopause Ovarian tenderness Discharge constant, profuse, color Internal examination—(findings their evolution, and possible relation to the rest of the status) In men Frequency of emissions

Extremities—Upper *Shoulder* Nutrition Scapulae position, and arms and hands, position, wasting, weakness or altered tonus in any muscle group

Motor power Loss partial or complete paralysis Raising shoulders and arms rotating arms and forearms Flexing, extending, pronating, and supinating arms Deep reflexes

Hands—Thumbs and Fingers Ability to flex and extend and spread and approximate fingers Wrist drop Atrophy of thenar or hypothenar eminences or interosseous muscles changes in nails, unusual perspiration Freedom of joint movements complicated hypotonus hypertonus Tremors, changes in sensation Grip in each hand (measure with an ergograph dynometer) Finer coordination movement Ataxia finger to nose chin or forehead and finger tip to finger tip test

Handwriting Have patient write his name etc on a history sheet

Extremities—Lower *Iliac crests* Hips and nates (buttocks) Nutrition Thighs legs and feet position wasting weakness or altered tonus in any muscle group Foot drop Fallen arches atrophy of feet Changes in toes and toenails (hammer toes bunions)

Motor power Loss partial or complete paralysis Thighs flexion abduction adduction and rotation freedom Knee (Charcot's joint trophic, tabes dorsalis or syringomyelia)

Legs, Feet and Toes—Nutrition position trochanters flexion, extension Power of walking gait tendency to fall

direction (see above) Complicated movements tremors fine coarse rapid slow intentional unintentional Equilibrium with eyes closed Romberg s swaying Walking with eyes open on floor on ceiling and closed Motion of legs while lying with eyes open and closed crossing legs walking movements heels to opposite knee and down tibia to ankle description of a circle with each foot Deep reflexes

Palpation and percussion over nerve trunks.

Electric examination of motor nerves and muscles

Skin —Scars or pigmentation suggesting healed syphilitic lesions color alterations of color and temperature (erythromelalgia Weir Mitchell local syncope and cyanosis flushing and throbbing extremity Raynaud thromboangiitis obliterans Buerger and sclerosis) Vasomotor phenomena local blanching passive capillary congestion Trophic perforating ulcers on feet Segmental nerve distribution (Figs 7 and 8 pp 74 and 75)

Perspiration abnormal localization glossy skin scaly skin atrophy elasticity (scleroderma morphea) urticaria or edema (local) ulceration exanthemas purpura petechiae ecchymoses hemorrhage pigmentation fibromas neuromas (von Recklinghausen s) Nails lunula surface ridges thickness and brittleness indicate neurotrophic disorders

Convulsions — Extent over head trunk and extremities or one side or one member **Character** Which parts first and most attacked and how do the waves of the tonic and clonic spasm spread? What movements predominate? Is the paralyzed part omitted or involved? **Average duration** Frequency occurring night or day or in early morning? **Breathing** Pupils vasomotor condition froth and bites sphincters **Consciousness** totally or partially lost **Aura** **Equivalents** with or without automatic movements **Psychical** and nervous symptoms before and after attack **Hysterical attacks**

Diagnostic summary and indications for further observation and treatment

Neurologic Conditions

A Cranial and intracranial conditions

1. Tumors and other space occupying lesions
2. Traumatic and posttraumatic syndromes
3. Inflammation meningitis and encephalitis and their sequelae
4. Vascular disease, embolism, thrombosis hemorrhage and their sequelae
5. Cerebellar syndromes such as Friedreich's disease
6. Epilepsy and its equivalents
7. Migraine
8. Meniere's disease
9. Extrapyramidal syndromes such as chorea athetosis Parkinson's disease and so forth

B Conditions of spinal column and cord

1. Tumors
2. Traumatic and posttraumatic conditions
3. Poliomyelitis
4. Syringomyelia
5. Spina bifida

C Disseminated conditions

1. Syphilis of central nervous system including tabes, paresis and syphilis of the meningovascular system
2. Multiple sclerosis and other degenerative states
3. Deficiency states

D Peripheral conditions

1. Neuritis and polyneuritis
2. Neuralgia especially facial and sciatic
3. von Recklinghausen's disease
4. Myasthenia gravis
5. Various muscular dystrophies and atrophies

Laboratory Studies in Mental and Nervous Diseases

The routine laboratory studies should be carried out in all cases with special emphasis on certain examinations

Urine studies are particularly important in patients suspected of having nephritis with uremia In such cases low fixed specific gravity albuminuria cylindruria and erythrocytes and Bence-Jones protein are to be looked for In mental cases as well as in coma cases and in arteriosclerotic patients glucosuria and acetone bodies are to be sought In neural cases uroporphyrin hemoglobinuria hematoporphyrinuria urocrythrin alkaptonuria and indicanuria may be significant

Blood studies for anemia should be completed with reference to hematocrit reading cell volume hemoglobin content and cell counts macrocytosis or sickling as well as for changes in the leucocytes Eosinophilia suggests animal parasitism Abnormally young polymorphonuclear and large mononuclear cells may predominate in a leucocytosis

Leucopenia with relative lymphocytosis is common in virus infections Lymphocytosis showing vacuoles and nucleoli and other abnormalities should be looked for

Blood cultures are to be done in all patients with sepsis and toxic cerebral symptoms

Blood chemistry studies of N P N retention hyperglycemia and for uric acid chlorides and calcium levels should be done

Serologic studies for syphilis complement fixation or precipitation and agglutination tests for *B proteus* OX 19 for typhus typhoid tularemia brucellosis etc or abnormal heterophilic sheep cell antibody agglutinins should be carried out

Cerebrospinal Fluid examinations are of the greatest importance for slight changes or abnormalities in the pressure without and with (Queckenstedt maneuver) compression of the neck veins Note spontaneous clotting Any turbidity

of frank pus gross fresh or changed blood (xanthochromia), should be noted during the meningeal tap and, if present fluid should be collected in numbered tubes

Cultures should be taken directly whenever the cerebro spinal fluid is cloudy Cell counts with differential counts protein, albumin, globulin (Pandy, Ross Jones tests), sugar chlorides, urea, and blood pigment content tests should be made

Smears of any sediment and of any pellicle that forms after the cerebrospinal fluid has stood overnight in the ice chest should be stained for tubercle and pyogenic bacteria, abnormal cells Torula yeast *Coccidioides immitis* Sporothrix, and any other type of pathogenic organism

Serologic studies of the cerebrospinal fluid for syphilis are most important along with studies of the effects on colloidal solutions, as gold sol (Lange s) or the gum mastic sol

Cerebrospinal fluid which is xanthochromic clots spontaneously and contains excess of cells pleocytosis (Froin s syndrome) indicates obliteration of the subarachnoid space of the spinal cord by tumor or inflammation Without the excess of cells but with high protein content tumor alone is suggested Xanthochromia in jaundice is not accompanied by coagulation increase of cells or turbidity

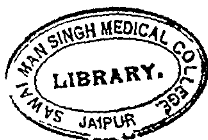
Cerebrospinal fluid from a cistern or subarachnoid puncture should *be treated the same as ordinary spinal fluid*

Gastric analysis is of value in neurologic cases where there is a question of posterolateral cord lesion in pernicious anemia in which an absolute histamine resistant achlorhydria is usually found It is necessary to do one intubation and make one analysis of the gastric contents in patients with gastro intestinal neurosis The usual normal findings are most assuring Repeated intubation may help to fix a gastric *neurosis*

Stool examinations for obvious or occult blood and on ova of parasites are regularly made Where there is a question of malingering *the collection of the stool must be supervised*

Sputum examination for blood bronchial casts, Laennec s pearls Curschmann's spirals eosinophiles and bacteria particularly pneumococci tubercle bacilli and *Coccidioides immitis* are routinely done

Cystometry facilitates the diagnosis of neurologic vesical dysfunction



XI THE HISTORY AND PHYSICAL EXAMINATION IN PEDIATRIC CASES

By

GEORGIANNA W HERRMANN GREER A B M D AND
GRETCHEN S HERRMANN RUNGE A B M D

In infants and young children the history should be obtained from the mother or nearest of kin or one who has been in close association with the child Older children will often give an excellent account of themselves but one should also have a history from an adult in these cases The type of history as well as the physical examination will of necessity vary considerably with the age of the child We will here present the things that should be taken into consideration with infants but as the child grows older many things such as infant feeding lose their importance and one may more nearly approach the adult type of history and physical examination

The optional method of history taking in pediatrics is from the parents not in the presence of the child if he is over 2 years of age If it must be taken in the room with the child try to see that he is well occupied by some other person Some questions should *never* be asked in his presence and one must always be discreet

Chief Complaint (C C)—This should be the presenting sign or symptom noted by the informant and not the diagnosis of a physician or a lay person

Common chief complaints are fever rash convulsions difficulty in nursing or breathing pallor cyanosis jaundice diarrhea vomiting loss of weight frequency in urination enuresis puffiness about the eyes or other parts swelling and redness of the joints sore throat rubbing ear or nose coryza discharge from any orifices aimless movements and nervousness

Present Illness (P I)—The exact date or hour if possible of the onset of the first recognized symptoms or initial dis

turbance should be established. Any knowledge of exposure to any infectious disease within the previous few weeks should be inquired into and recorded. The progression of the primary or subsequently developed symptoms and signs should be set down chronologically. When the informant has spontaneously told the story of the illness with minimum prompting, information that may be pertinent must be sought or ruled out by direct questioning. A complete chronologic record of the illness will often save much delay and laboratory work and many mistakes and will point to any urgently necessary studies and emergency therapeutic measures.

Birth and Neonatal History.—The prenatal history of the mother should be inquired into and any abnormalities in her health and nutrition recorded. Ask specifically about a prenatal blood Wassermann or Kahn test and record the results.

The obstetric presentation, length and character of labor, type of delivery, term length and any complications during or immediately after labor on the part of the mother should be recorded.

Record neonatal or birth weight, length and color of the infant. Was there any edema, respiratory difficulty, cyanosis, apnea, pallor or bleeding in the newborn infant? Was any type of artificial stimulation of respiration necessary? Was any type of medication given to the baby immediately after delivery? This should include mention of silver nitrate solution in the eye and parenteral vitamin K.

In early neonatal life were any abnormalities noted, as tupor, difficulty in nursing, palsies, paralyses, convulsions, irregular breathing, excessive vomiting, or congenital anomalies? Was there development of cyanosis, icterus, rash, snuffles or any other unusual difficulty?

Feeding.—Was the baby breast or bottle fed? If artificially fed, give the date of the change, reason, exact formula and schedule. If several types of formulas have been used, record each one with the time as nearly as possible during which each was used. Was there any difficulty in feeding at any time or complications such as vomiting, diarrhea, con

stipation, loss or failure to gain in weight? If it seems relevant, ask about the method of preparation of the formula in detail—whether all bottles are made up at once or separately, sterilization methods and refrigeration If any types of carbohydrates are used, be sure to note which ones and amounts

If solid food is taken, record the types and amounts and the age at which each was begun If the infant is over 4 months of age and receiving no solid food give the reasons for this In infants with teeth, inquire as to whether or not the food is still pureed

Note any difficulties in feeding, weaning, the appetite the feeding schedule, and the average daily diet of the child

Vitamins—Ask specifically about orange juice and cod liver oil, noting the amounts of each used and the time at which each was begun Also include any other vitamins administered with the dosage, the brand, and the regularity of administration In suspected vitamin A and D or C deficiencies do not be misled by the mother's assertion that the child has received the recommended amounts of these vitamins

Development—Record as the mother remembers the age at which the child first held its head erect, sat alone, stood alone crept walked and began to talk first in single words and then in phrases *Note the age at which teething began* and whether it progressed normally or not

If the child is older record the age at which he started school or kindergarten and whether or not his scholastic progression has been normal Developmental records such as weight and height curves should be kept and available

Review of Systems for Symptoms—Inquiry should be made first into the general health of the child and then specifically into each organ system The older child is often well able to give a description of his own symptoms In younger children, these are practically all discovered by observations on the part of an adult

The following symptoms should be asked about in most cases Head, eye, ear, nose and throat Headaches, blindness deafness, sore throat

Respiratory system Sniffles nasal discharge sneezing coughing wheezing croup and respiratory difficulties are significant

Cardiovascular system Shortness of breath cyanosis pain in the chest fainting or syncope is rarely important

Gastrointestinal system Vomiting abdominal pain diarrhea constipation toilet training and sphincter control Any cathartic medications used should be recorded

Genitourinary Toilet training for bladder control enuresis nocturia genital irritation circumcision pubertal changes if present with the date of menarche should be established

Neuromuscular Tics and habit spasms weaknesses and paralyses convulsions and syncope are inquired into

Personal History (Per H) — Some statement of the child s social adjustment both within the family and outside should be made If there are any abnormalities such as temper tantrums they should be discussed in detail Habits including toilet training may be noted here if they have not been previously recorded

Past History (P H) — List all of the common contagious diseases that the child has had and any other illnesses that he may have had In this include the age at which the illness occurred and its severity or complications which occurred Ask specifically about each chicken pox measles mumps pertussis scarlet fever diphtheria rheumatic fever chorea and growing pains Note all of the immunizations which the child has had and the time at which each was given Ask specifically about diphtheria smallpox pertussis tetanus and typhoid immunizations and if the type of material and dosage used is known record it If booster doses have been given record these Include in this also any tests which may have been performed such as Schick and tuberculin tests

If any serious illness has occurred describe it in some detail If sulfonamide drugs penicillin or streptomycin have been used in the past note this with the duration of the therapy and any reactions which may have occurred

Record all operations which have been performed with the date of each and a note of any complications

If radiograms have been taken or special studies such as allergy tests made record same with known results if possible

Family History (F H)—Inquire into the health of the parents and any other persons who are closely related or in intimate contact with the child Ask about any types of familial disease—may include venereal disease familial icterus RH blood types of mother and father congenital anomalies tuberculosis or other relevant diseases List the siblings and their respective health status and also any miscarriages or stillbirths which may have occurred in the family

Physical Examination (P E)—The method of procedure in the physical examination in pediatrics varies greatly with the age of the child Only a very poor examination can be made using methods of force It is most desirable that the child be examined without clothing but in some older children this promotes a great deal of apprehension It is better to allow them to retain some clothing or have a sheet with which to cover themselves for children are very modest One always proceeds in the manner in which he secures the most cooperation on the part of the child The parents may remain in the room but as a rule better cooperation is obtained in their absence In all cases a period of observation during which the examiner attempts to make the child at ease and confident of the fact that he is not going to be harmed is necessary

One may here begin a discussion of some subject of interest to the child which may be continued to keep his attention during the examination In infants the routine method of examination is abandoned and examination of the extremities chest abdomen and genitals is carried out before the head and neck are examined As a rule some restraint is necessary for examination of the ears nose and mouth If the nurse holds the patient properly and firmly the amount of struggle may be very small Never pry the mouth open with a great deal of force If the child is crying sooner or

later he will open it and a tongue depressor may be inserted If this is placed far back on the tongue he will gag automatically and not close his mouth In older children the adult routine may be adopted if the child is not apprehensive otherwise examine the chest and abdomen first

Delay procedures such as the drawing of blood or the performance of skin tests until the very end of the examination Never tell the child that a painful procedure will not hurt but minimize the pain and impress him if possible that if he cooperates the pain will be much less Allow him to investigate to some extent instruments which may appear very formidable to him Children are fascinated by such things as the sound of their hearts beating and if a memory of this rather than a very unpleasant one remains he will thereafter be an eager and cooperative patient

General —Weight height temperature and pulse and respiratory rates are as a rule recorded by the nurse

The general development of the child with some indication of whether he appears normal both physically and mentally is to be noted Make some notation of the manner in which he carries himself if he is able to walk that is of the posture and of the gait

The skin should be examined and the presence of any lesions noted along with the skin turgor and the amount of subcutaneous fat The general skin coloration and the mucous membrane color should be recorded

Palpate all of the lymph glands for size tenderness consistency and character in the cervical axillary and inguinal regions

Head and Neck —

Head In infants the fronto-occipital measurement of the head and the patency and measurements of the openings in the fontanels should be noted The characteristics of the patent fontanels should be noted especially depression bulging or firmness In older children the shape of the head and the type of hair present are important

Eyes The general configuration of the eyes is noted and the presence of any puffiness, ptosis blepharitis marginalis, conjunctivitis, or infection of the lids noted The ocular movements should be examined by having the child follow a finger with his eyes, and the presence of any strabismus, nystagmus, or convergence difficulties noted

The pupillary reflex is examined and any irregularities of the structure of the cornea, iris, or lens noted Light only is used in examining the pupillary reflex in infants

Opthalmoscopic examination is carried out whenever feasible In infants this is practically impossible without the use of a drug to dilate the pupil

Ears The configuration of the external ear is noted The external canal is inspected for foreign bodies infection, and cerumen Otoscopic examination of both ears is very important and the appearance of the tympanic membrane is described Hearing may be tested roughly with a watch or tuning fork though good observation will throw a great deal of light on gross hearing defects

Nose The configuration of the nose and any flaring of the alae nasae with respiration are noted Both nasal passages are examined with the use of a speculum if any marked discharge or inflammation is present

Mouth Lips The color and configuration of the lips are noted and the presence of any ulceration cheilosis, rhagades, or abnormal pigmentation of the buccal mucous membrane indicated Any lesions of the buccal mucous membrane are also noted

Tongue The color size coating and configuration of the tongue are noted

Gums and teeth The presence or absence of teeth is indicated and if there is any abnormality such as malocclusion, peg teeth (Hutchinson s) mulberry or rose molars variation from the normal in number for the child s age or the presence of deciduous teeth at an abnormal age it is noted The condition of the molars in older children is of some importance

The gums are described as to color and firmness Any evidence of swelling or hemorrhage is recorded

Tonsils The tonsils are described if present—note hypertrophy presence of infected crypts scarring and inflammation

Pharynx The presence of a postnasal discharge and the type of discharge present are recorded Also any bulging injection or presence of hypertrophic lymphoid tissue are set down The configurations of the palate and uvula are indicated One does not in general examine for the presence of enlarged adenoids by digital examination

Neck Any deviation of the trachea from the midline is noted The thyroid gland and the cervical lymph nodes are palpated and any abnormality noted Any stiffness of the neck or an inability to flex the chin on the chest (Brudzinski s sign) are noted

Thorax—The general configuration of the thorax is examined Look for any peculiarities in size and shape deformities funnel breast pigeon breast rachitic or scorbutic rosary Harrison s groove Litten s sign and abnormal pulsations Observe the respiratory movements closely for any evidence of splinting of one side of the chest and any difficulties in respiration Palpate the whole chest and back for tactile fremitus both bronchial and vocal and thrills

Examine the breast and note development if any is present Measure the chest circumference at the nipple level in infants

Lungs—Percuss the pulmonary areas for dullness (in small children the chest wall is very thin and light percussion with the flat of one finger usually gives best results) Note the extent of the pulmonary bases posteriorly and the movement of the diaphragm with respiration Auscultate for abnormal breath sounds and rales

Heart—Look for abnormal bulging of the precordium and any pulsations Palpate for the point of maximum intensity of the apex impulse (PMI) and for any abnormal pulsations Percuss and mark off the borders of the heart and outline the

retrosternal area in the second interspace Auscultate the heart over all four valve areas and note the rate and rhythm and the presence of any murmurs or other adventitious sounds

Abdomen—Examine the contour of the abdomen Note any abnormalities of the configuration, the umbilicus the panniculus thickness, rigidity, distention or fullness, and the presence of a fluid wave Percuss for the presence of abnormal amounts of gas or dullness Palpate very gently and note the liver edge and the spleen if it can be felt and any abnormal masses that may be present Note herniae

Genitals—Note the development of the external genitals with indication of any abnormalities such as abnormal orifices hypospadias, epispadias urethral or vaginal discharge, or inflammation of the vulvae Note whether or not circumcision has been performed in boys Also whether or not the testes are in the scrotum if not if they are palpable

Rectum Examine the rectum externally for evidence of fissures or other abnormality If there is indication do a rectal examination being careful to use a small finger in infants Note sphincter tone

Back and Spine—Note any abnormalities of the back and any curvatures of the spine kyphosis, or scoliosis

Extremities—Examine all four extremities and note any abnormality in configuration size muscular development, or motion Examine the fingers and nails for abnormalities such as clubbing and cyanosis

Blood Pressure—The measurement of the blood pressure in children is not difficult and it is done as it is in adults the pressure may be taken in brachial or femoral arteries though it is usually taken in the brachial if the femoral pulse is poor take it in all four extremities It is most important, however to use a cuff of the right size in children Special cuffs are usually provided in pediatric clinics but one must not use the small infant cuffs in larger children because there is considerable error introduced and usually a much higher reading is obtained The best rule is to use as large a cuff as can be fitted between the elbow and the shoulder

Reflexes—In all children a certain number of reflexes may be elicited with ease These include the knee reflex the ankle jerk and the biceps reflex and they should be attempted in all children The Babinski and the Kernig reflexes should be tested for The Babinski is positive normally in infants usually up until the time that they begin to walk

The tonic neck reflex and the Moro reflex should be looked for in newborn babies

If any abnormalities are present a complete neurologic examination should be performed

Routine Laboratory Work in Pediatric Cases—Urine blood and stool studies are carried out as in adults but with more emphasis on stool examinations

Summary—Summarize all of the positive facts from the history and the physical examination in a brief form

Tentative Diagnosis—This is the diagnosis that may be made on the basis of the physical findings and the history This may include more than one diagnosis if one alone cannot be defined from the available data

XII THE HISTORY AND PHYSICAL EXAMINATION IN SURGICAL CASES

By

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George D H C Herrmann, B S

Systematic case taking and careful clinical examination of patients with surgical conditions should be carried out in the same painstaking detail as that described for patients with medical conditions The diagnosis must be arrived at in the same systematic way Frequently however, there seems to be more urgency in the situation, and more rapid, direct, yet exact, differential diagnosis seems to be necessary There are many conditions in which surgical diagnosis seems to be more or less obvious from the chief complaints of the present illness The special examination of the part the organ, or the system most obviously affected and a few selected laboratory studies often make the diagnosis To some surgeons these are all the examinations necessary and seem to constitute a case study Time taken to expand this study by the more comprehensive investigation required by the internist often yields satisfying returns

History in Surgical Cases

Personal History (Per H) —The intimate personal history of the individual with particular reference to the possibility of psychologic storm with need for some escape from realities must be developed before undertaking surgical operation This is particularly true if the physical signs and laboratory evidence do not support probability of an acute surgical condition, particularly one in the abdomen An ordinary neurosis and escape mechanism is often converted into a traumatic neurosis by surgical intervention The secondary operations for the relief of symptoms presumably due to adhesions must be done only after exhausting studies including a psychiatric survey The habits should be carefully reviewed with respect

especially to the use of alcoholic beverages tobacco stimulative sedatives or narcotics The nature of the individual's occupation whether there is exposure to any type of hazards or elements should be taken into consideration

Chief Complaint (C C) —This is a succinct expression of the predominating symptoms to be recorded in the same clear language used in a medical case The exact location of pain its character and associated symptoms demand immediate attention Besides the most common complaint of pain in the abdomen or elsewhere there may be nausea vomiting hematemesis cough expectoration hemoptysis fever chills weakness and swelling developing spontaneously or following the trauma of an accident

Present Illness (P I) —The symptoms are developed chronologically from the very onset with an exact account of the precipitating factors The type and rate of growth of swelling size constancy throbbing recession or appearance of red streaks and lymph adenopathy the appearance of toxemia headache malaise drowsiness fever chill and weakness or common collapse may occur with overwhelming infections or black widow spider sting

Local or general infections requiring surgical management may be acute abscesses cellulitis lymphangitis phlebitis erysipelas septicopyemia wet gangrene gas bacillus invasion malignant edema or anthrax (charbone) Tetanus and tularemia may give local and general symptoms

Review of Symptoms in Various Systems —Endocrine or glandular disorders frequently give rise to symptoms that are relieved by surgical ablation of a part as in the case of the eye difficulties nervousness *palpitation tremor* voracious appetite loss in weight and strength and sometimes myocardial insufficiency of hyperthyroidism

Thymic hyperplasia and tumors may produce stridor general asthenia drooping eyelids *myasthenia* gravis or Cushing's syndrome Pituitary tumors produce headache and visual disturbance acromegaly or gigantism

Adrenal tumors may cause headaches, changes in voice and masculinization or virilism in females, and the clinical picture of Cushing's syndrome

Respiratory disorders as tension pneumothorax, empyema lung abscess, and bronchiectasis give rise to dyspnea, tightness, and cough expectoration of foul sputum, pus, or blood

Circulatory disturbances as occlusion of a major artery causes symptoms in accordance with the size of the artery that is blocked and its location Shock may be severe and result in syncope with dyspnea in a massive pulmonary embolism In peripheral embolism, pain of an excruciating character, cramps nausea, vomiting and cold sweat precede coldness, numbness, and sweating in the extremities The cardinal symptoms of coronary occlusion may be simulated, including extreme dyspnea fullness tightness in the chest and neck weakness, faintness collapse, and must be kept in mind Such symptoms of heart disease as anginal pain palpitation dyspnea, and edema development should be inquired into even in obvious surgical cases

Gastrointestinal diseases cause pain, the time, location, radiation, change of position and character of which may be diagnostic The associated developments such as nausea vomiting, diarrhea, jaundice increasing or decreasing, persistent or intermittent, and gaseous distention are important

Genitourinary tract diseases may produce frequency, burning stranguria or dysuria difficulty in starting and stopping and decrease in the size and force of the stream Nocturia, polyuria, pyuria anuria incontinence through normal or abnormal orifice, cloudy smoky foul smelling urine, and genital discharge help in the diagnosis

A *frank sexual* history as to habits disturbance of libido potentia, perversion trauma or strain should be obtained

Catamenia or *menses* (C H) history gives clues as to gynecologic and endocrine conditions Record age of menarche, regularity or irregularity intervals duration of period amount of flow number of napkins per day dates of onset, and ending of last period Disturbances in type severity

intermenstrual bleeding or spotting may be most significant *Vaginal discharge*—type white foul or bloody may be significant Menorrhagia metrorrhagia or amenorrhea and its duration dysmenorrhea whether at or between periods date of climacterium or menopause associated disturbances in other systems and previous gynecologic disorders results of treatment date of operations and extent should be recorded

Neuromuscular conditions may produce shooting pain, herpetic eruption difficulty in walking weakness paresthesias numbness tingling paralysis fixation dryness sweating or perforating ulceration Headache confusion forgetfulness inability to concentrate on a subject visual disturbance blindness anosmia parosmia auditory difficulties deafness vertigo general or epileptiform or Jacksonian convulsions and speech difficulties may develop and suggest intracranial lesions

General health Weight records are noteworthy, also previous serious operations or rejections for insurance or military service on the basis of an examination

Marital history status Compatability age and health of spouse and children occurrence of stillbirths miscarriages or puerperal infections should be stated

Past history in reverse chronologic order from most recent to most remote illness may be revealing Pneumonia influenza pleurisy tuberculosis dysentery (type) typhoid gonorrhea chancroid syphilis tropical diseases amebiasis filariasis and worm infestations may be responsible for persistent pathologic processes Any rare disease acquired in military services and dates and types of vaccinations and of the booster doses may be of contributory significance Any tendency to bleed excessively or thrombose unduly should be recorded and underlined

Family history may indicate tendencies to allergy scrofula tuberculosis cancer goiter diabetes hemophilia or thrombophilia

Physical Examination in Surgical Cases

The physical examination in surgical cases should be carried out in the same complete and systematic manner as in med

cases The tendency is to proceed directly to examine the part indicated to be involved by the history, the complaints, and the present illness Inspection, palpation, percussion and auscultation are to be *followed routinely* *Temperature, pulse, and respiration rates* are to be recorded, also the *blood pressure* in both arms and legs

Head—General conditions, endocrine disorders, and local scalp, skull, or facial lesions may be present The scene may be dominated by disturbances of the *sensorium* such as delirium confusion, stupor, inattention, impairment of memory, irritability, excitability, coma, shock, restlessness air hunger or convulsions either general tonic or clonic Jacksonian The *scalp* is examined for cleanliness nevi, swelling, hematoma, abscess (pyogenic or tuberculous, deep or superficial subaponeurotic or subepicranial), ulcer (rodent or pearly), cysts (fluctuating, soft, pulsating), or solid hard tumors

The *skull* may show periostitis syphilitic erosion, craniotabes osteomyelitis exostoses, irregularities, or tenderness, depression hernia cerebri, circumference increase in osteitis deformans (Paget s) or acromegalic superciliary ridges and frontal sinus enlargement and whopper jaw Trauma may cause fracture and intracranial vascular ruptures with bleeding from orifices such as ears nose mouth meningocele or encephalocele

Brain tumor localized in the frontal region may cause inattention memory changes and disorientation in the precentral area it may cause muscle paralysis flaccidity, tonic or clonic spasm, tremor loss of coordination with static ataxia movements, intention tremor involuntary movement, athetosis, or tics In the postcentral lesions there is hypercutaneous sensibility limb localization, sense of touch, heat, cold, pain, joint position, and kinesthesia Tumor in the temporal lobe produces hallucinations of taste and smell and dream states In the parietal lobe aphasia and apraxia result, in the occipital lobe the results are hallucinations of sight blindness and hemianopsia Pituitary tumors cause bitemporal hemianopsia

acromegaly or Cushing s syndrome Cerebellar pathology causes nystagmus loss of sense of motion and position Romberg ataxia hypotonia hypermetria and adiadochocinesia

Test cranial nerve functional status (see neurology section for tests)

Facies carefully studied may give much information A pinched expression facies abdominalis hepatic ovarian and hippocratic suggest peritonitis or serious disease of the abdominal viscera Shock hemorrhage mitral myopathic and Hutchinson s facies are described and should be recognized

Eyes—Compare prominence of balls tension position direction (strabismus) motility and nystagmus and test extra ocular movements Drooping lids of myasthenia gravis suggest thymic tumor Ophthalmic surgeons note eyebrows direction of lashes stye (hordeolum) abscess cysts and scars, blepharitis marginalis entropion ectropion condition of puncta and lacrimal sac epiphora and meibomian cysts or abscesses (chalazion) Examine the *conjunctiva* for injec tions foreign bodies purulent exudation chemosis hemor rhage pterygium or pinguecula Note sclerae as to vascular ity at the sclerocorneal limbus and as to color white yellow or blue of ochronosis Study *cornea* transparency by oblique illumination for cloudiness Note luster curvature kerato conus loss of substance or foreign body in the cornea kera titis sclerocorneal injection or iritis *Iris* Note color posi tion depth of anterior chamber bulge or tremor position mobility variation iritis *Pupils* Note shape size adhesions reflexes to light and in accommodation study lens and media by slit lamp Determine roughly visual acuity binocular vision diplopia malingering visual fields tubular vision hemianopsia color sense and accommodation Do ophthal moscopic examination noting the character of the retina optic nerve disc papilledema blood vessels and maculae for exudate detachment or tumors

Bilateral exophthalmos suggests Graves s syndrome hemor rhage into the orbit congenital familial exophthalmos cavern ous sinus thrombosis aneurysm of the basilar artery pituitary

tumor, lymphoma, leucemia lymphosarcoma, and bone sarcoma Unilateral exophthalmos may be due to hemorrhage orbital tumor, cyst (acute or chronic), inflammation (pyogenic), tuberculosis, syphilis, or stimulation of the cervical sympathetic chain by a tumor *Pulsation* may be from arteriovenous type of aneurysm of the internal carotid artery and the cavernous sinus aneurysm of the ophthalmic artery, hemangioma, venous varicosities tumor transmitting pulsation meningocele or an encephalocele

Puffiness of the eyelids and suffusion, ecchymosis, cyanosis, change in the size of the pupils and voice with coughing dyspnea and dysphagia suggests serious esophageal diverticulum or mediastinal pathology

Enophthalmos ptosis, and miosis with *ipsilateral anhydrosis* (Horner's syndrome) indicate cervical sympathetic irritation

Exophthalmos may be unilateral or bilateral with lid lag wide palpebral fissure, nonwrinkling of forehead, and poor convergence Measure degree of proptosis, protrusion with Hertel's exophthalmometer after recording base line, unilateral or bilateral Note redness heat of inflammation, and findings upon careful aspiration of the orbital contents

Nose, Lips, and Mouth —Describe appearance of the nose, size symmetry broken or saddle shaped Note nares crusts epistaxis fetor Observe nasal passage obstruction collapse of the alae nasae septal deviation sense of smell, turbinates orifices of sinuses polyps, or choanal spur *Mucous membranes* Note color ulcers blisters cracks scars leucoplakia angular stomatitis cheilosis nodules or deformities Examine *lips* for herpes labialis simplex or ulcer, traumatic tubercles of syphilitic origin malignant cysts or tumors *Mouth* Note aphthous stomatitis *Gums* Note color retraction pyorrhea, spongy bleeding gum boils, tumor alveolar bleeding, or epulis Examine *teeth* for caries missing ones grinders dental work snags and broken rough and irritating teeth Describe the *tongue* as to color top surface appearance papillary hypertrophy, atrophy, tumor and mobility On the

undersurface note varicose veins Study the floor of the mouth for orifices of submaxillary gland inflammations, buccal surfaces orifices of Steno s duct swelling redness and discharge *Throat* Tonsils—Describe the pillars of the fauces fossae injection adenoids degeneration follicles crypts exudate scar or surface tags or nodules Examine *soft palate* and *uvula* as to position function deviation post nasal drip bulging of the posterior wall pharynx lingual tonsil and Waldeyer s ring *hard palate* for high or flat arch ulcers perforation or congenital cleft Epiglottis glottis larynx and vocal cords should be visualized with a mirror

Neck.—Flaccidity or nuchal rigidity cervical spine limitation of motion stiffness soreness or tenderness should be noted *Thyroid gland* Describe diffuse general or localized nodular tumor as to size shape reducibility or vascularity thrill and bruit whether due to external engorged veins or to internal interstitial arterialization Note consistency soft hard symmetrical asymmetrical elastic cystic or fluctuant mass with flushed moist or glossy skin over the goiter Note relation to trachea cricoid (isthmus) sternocleidomastoid muscle sternum movements on swallowing greatest circumference of the neck flushing of the skin throbbing of the carotid artery rapid pulse rate effect of compression of the carotid artery on thrill or murmur on tumor or on the eyes Palpate for enlarged lymph glands discrete or matted together freely movable or fixed

Chest—*Inspection* Note wounds color surface veins cutaneous vascular lesions vena corona nevi telangiectasia spider angioma signs of inflammation edema ulcers sinus swelling or abnormal pulsation Describe respiratory movements whether thoracic abdominal symmetrical in upper and lower fields Look for lagging retraction or bulging of interspaces shallow rapid breathing laryngeal stridor or dyspnea

Palpate for movements of respiration vocal fremitus distribution swellings tenderness heat consistency fluctuation crepitus crepitation size shape *position* attachments to skin

ribs, or muscles, erosion, pulsation, expansile at heart rate Compare position of cardiac apex impulse with left border dullness

Percussion Determine bases of the lungs extent of movement (after expiration and after inspiration), level of the diaphragm, extension upward of the gastric tympany liver dullness and retrosternal aortic and cardiac dullness in each interspace to the right and left of midsternal line

Auscultate the lungs, comparing sides for changes in breath sounds rales, and spoken and whispering pectoriloquy and for other abnormal succussion splash or tinkling sounds

Heart sounds at the bases are compared Describe abnormal or adventitious sounds as friction rub and describe the position and propagation of murmurs Neck vein engorgement rising pulse rate falling blood pressure, and distant heart sounds suggest cardiac tamponade for which pericardial paracentesis should be done Bronchoscopy and esophagoscopy should be undertaken only by trained specialists

Abdomen—Inspection Note change general distention, retraction scaphoid local swelling upper central or lower visceroptotic protuberance, bulging flanks visible peristalsis masses or abnormal pulsation sinuses protrusion or retraction of the umbilicus striae enlarged veins or scars

Intestinal obstruction causes frequent or constant vomiting which usually becomes fecal There is no passage of flatus or stool and the returns of enemas are clean Reflex ileus follows renal colic pleurisy etc Adynamic paralytic ileus complicates severe toxemias or cord or nerve lesions mesenteric embolism, or thrombosis Dynamic obstruction may occur due to lead poisoning or regional ileitis Congenital dilatation of the colon was described by Hirschsprung Take x ray films with the patient standing for characteristic gas and fluid level in the bowel

Palpation Note tenderness on pressure or rebound its position, area degree and associated reflex involuntary rigidity or voluntary defense spasm Look for epigastric hernias in the midline, masses location size, mobility and tenderness

liver edge tip of spleen and lower pole of kidney Palpate inguinal rings and canals and test for cough impulse

Percussion Outline the extent of the gastric and colonic tympany liver area and shifting dullness in flanks Make sharp jab or thrusts in gall bladder or kidney region for organ tenderness

Auscultation Listen for noisy peristalsis borborygmi friction over the spleen area uterine souffle systolic murmurs or fetal heartbeat

Rectal Examination Inspect for external hemorrhoids tenderness fissures palpation of masses proctoscopic or sigmoidoscopic examination

Look for herniation with or without strangulation of the gut externally in inguinal femoral umbilical or epigastric regions internally by bands of adhesion volvulus intussusception diverticulum pressure from outside or by foreign body Gallstone polyp tumor or fecal impaction scar tissue contraction after healing of injury or ulcer may obstruct

In abdominal tumors inspect and palpate for position size shape consistency borders surface notching mobility with respiration up and down side to side forward backward fluctuation wave tension pitting on pressure tenderness and anatomic relation Percuss mass outline borders of the organs gastric and colonic resonance Auscultate for sounds as borborygmi uterine souffle or fetal heart sounds

Describe general shape and size of abdomen any mass smooth or nodular liver right quadrate Riedel's lobe or notched spleen Consider hepar lobatum cystic gall bladder floating kidneys perinephric abscess renal tumor splenomegaly urinary bladder projecting up from the pelvis uterine fibroid adnexal tumors or walled-on abscesses in the abdominal wall of the pelvis appendiceal or diverticulitis origin Pancreatic cysts come up into the epigastrium with the stomach tympany above and colon below Omental and mesenteric masses move while retroperitoneal tumors are fixed

Genitals Examine for discharge or lesions, scrotal contents, varicose veins, testicular tumors, epididymitis, urethral caruncle, or stricture Use a vaginal speculum to visualize the cervix Rectally palpate the prostate for size, consistency, regularity, nodularity, tenderness Feel the seminal vesicles Massage to express pus for study Palpate the inguinal regions for glands or ring relaxation Test for circumanal or saddle anesthesia

Spine—Inspect for normal curves or exaggerations postural deformities, kyphosis, lordosis Note position of head, level of shoulders, scapulas, and iliac crests Palpate and percuss over spinous and transverse processes and sacroiliac synchondroses for ligament or muscle tenderness, swelling, fluctuation of "hot," "cold" abscess Note rigidity, fixation, nerve root tenderness radiculitis, and distribution

Test joint action, flexion extension and lateral rotation of the head, trunk, or pelvis Note length of legs whether equal or unequal Try holding head over end of the table, side bends of the trunk, passive flexing of the hips, and hyperextensions of the extremities For hip joint disease determine the range of active and passive *movement* and Lasegue's test The sacroiliac synchondroses may show slipping or tenderness on pressure Knee and ankle joints are examined one by one for swelling limitation of movement, or tenderness Feet Note color and temperature, investigate motor function of the foot Note deformities of hammer toes bunions flat or high arches Palpate dorsalis pedis, posterior tibial pulses (see peripheral vascular disease section) Test deep reflexes as knee kicks and Achilles tendon jerks, telltale absence or hyperactive, bilateral, or unilateral reflexes with Babinski or other abnormal reaction should be noted

Routine Laboratory Work in Surgical Cases

In surgical conditions the same routine chemical pathologic laboratory procedures are to be carried out as in medical cases

The routine *hemogram* hemoglobin and red and white blood cell and differential counts are made However it is frequently necessary to make a certain special study first, such as the leucocyte and differential blood count or some other examination that will give convincing diagnostic information

The *urinalysis* is carried out on voided or catheterized specimens and in some cases urine is collected from each kidney and sometimes under sterile conditions for bacteriologic study

Vomitus and *stools* along with *stomach contents* and *proctoscopic specimens* are examined for food content and blood macroscopically microscopically and chemically Acid content and pH and parasitologic as well as bacteriologic studies are done when indicated

Urine and *blood serum* studies for urobilinogen and bilirubin should be carried out in all cases of icterus or jaundice

Liver function tests as cholesterol cephalin flocculation bromsulfalein and blood serum protein levels are to be done quite often Urinary and blood serum levels of amylase in cases of possible acute pancreatitis are diagnostic in the early stages

Swabbings from the nose throat ear any open lesion rectum vagina cervix urethra and any obvious discharge are studied bacteriologically in smears and culture and by animal inoculation Tissues from puncture wound areas in tetanus cases are cultured anaerobically

Blood cultures are made in all patients with septic fevers or prolonged febrile conditions

Body fluids aspirated from lymph glands cysts or body cavities are cultured smeared and studied physically and chemically The appearance specific gravity albumin mucin and cellular content are used to determine whether the fluid is an exudate or a transudate

The sediment obtained by centrifuging is fixed or it may be embedded in paraffin sectioned and studied microscopically Frozen sections may be made

The *spinal fluid* is studied as to the presence of fresh or old blood or pus, xanthochromia, cellular and protein content and sugar level, and serologic and gold sol reactions are determined. Smears and cultures are made.

Biopsy specimens are removed surgically for frozen or paraffin sections and microscopic study. Frozen section pathology of all tissues removed is to be checked always by an embedded tissue study.

Tissue surface scrapings are stained by the Papanicolaou technique. These are submitted to a pathologist experienced in this method of study for abnormal or malignant cells.

APPENDIX

DIFFERENTIAL DIAGNOSIS OF SOME COMMON SYMPTOMS

The Study of the Unconscious or Comatose Patient

The **unconscious patient** is often brought to the physician by relatives associates or witnesses or at least by the carriers or the ambulance men Any of these may have information or have made observations that may be invaluable clues in the solution of the problem of the cause of the coma Facts and findings will determine what steps are to be taken in the emergency situation

Question those accompanying the patient directly as to what happened to the patient insofar as they observed matters How long had he been in coma? Was he known to anyone intimately or even slightly? Was he subject to attacks fits faints seizure or convulsions? Was he an alcoholic or an epileptic or diabetic or nephritic or did he have cirrhosis of the liver or high blood pressure? What was his age and what was his occupation? Had his previous health been good? Were there any bottles or containers of any *medicine* tablets solutions or gases or instruments anywhere near him when he was found? If so make these available for analysis and study if possible

A systematic and exhaustive physical examination should be carried out in every comatose patient even though the diagnosis may seem to be obvious The odor of *alcohol* should not be allowed to cover up a more serious disorder

The complete outline of a routine must be followed through A quick but careful scrutiny of the patient should include an estimate of his general build height and weight Note clammy or dry skin nutritional state apparent general and social status race and age

Look for gross evidence of severe *trauma* contusion or lacerations *bleeding* source noting character amount and indications

Head, scalp, and *skull* are examined for lacerations and depressions *Eyeballs* are tested for reduced intraocular tension *Pupils* are studied for *size, equality, fixity* *Ophthalmoscopic examination* is *indispensable*

Lips and *oral mucosa* are examined for chemical burns *Breath* is smelled for odor of *alcohol, ammonia, acetone, phenol,* or any other chemical substance *Jaw* and *neck* are tested for stiffness or rigidity

Note heart rate, blood pressure in both arms, heart rhythm Get specimens of blood and urine for analysis

Neurologic Examination —Study for meningitis, encephalitis brain abscess, or tumor

Cardiovascular Examination —Study for *hypertension* or atherosclerosis for myocardial infarct and bacterial endocarditis Take an electrocardiogram

Pulmonary examination —Look for an infarct, massive collapse of a large part of a lung bilateral pneumothorax, pleural shock or source of air embolism

Abdominal Examination —Look for pneumoperitoneum or fluid from ruptured viscus fractured spleen or kidney

Laboratory Examination —Check for glucosuria, albuminuria, diacetonuria, hyperglycemia or reduced CO_2 combining power Red blood cells and casts in the urinary sediment are significant

Metabolic disorders call for emergency corrective measure *Coma of diabetes mellitus* is the result of acidosis of incomplete fat metabolism and shows acetoacetic acid and acetone in the urine The fruity odor of acetone bodies in the breath, deep air hunger acidotic Kussmaul breathing without cyanosis soft eyeballs diabetic retinitis warm dry skin glucosuria, hyperglycemia, and a low CO combining power in the blood are *cardinal signs of diabetic coma* *The lower* the CO values per cent the more severe the acidosis

Precipitating factors such as fever and the location of the focus and type of infection and the effectiveness of penicillin must be considered Quiet drowsiness and a dream state

usually precede the development of coma The presence of complications vascular nervous or ocular retinal changes must be taken into account

Uremic coma may develop suddenly in a patient with Bright s disease congestive heart failure or the crush syn drome or in shock Usually however there have been *head ache* visual disturbances mental changes and a *noisy* con fusional state preceding convulsions of epileptic form type Profound unconsciousness with flaccidity and muscle twitch ing Cheyne Stokes dyspnea and the urinous or ammoniacal breathing dry furred tongue encrusted mucous membranes and frosting of the dry skin are usually noted

Cholemic and *hepatic coma* of liver insufficiency may be suggested by the sunken eyes and cheeks with superficial venules of the hepatic facies and a decreased liver dullness and ascites Liver function tests are significant Glucose and vitamin B complex I V may result in clearing of the coma

Eclampsia is a sudden convulsive coma in a patient well along in pregnancy

Headache

Cephalagia is a most common first symptom of fever usher ing in an acute infection or any one of a number of general conditions intoxications mental or emotional disorders worry strain or exhaustion In addition to general condi tions local processes about the head or intracranially may be at fault A differential diagnosis of headache alone is rarely necessary There are some conditions which always present headache with constant characteristics

Note the character ache or peculiar sensation dull con stant sharp throbbing Location unilateral bilateral over the *sinuses* in frontal occipital temporal or basal regions Radiation depth deep superficial Intensity or severity progress duration relief frequency of recurrence Aggravat ing factors stooping other positions eyestrain intense light noises hunger eating excitement exertion constipation Time of day at onset of attack Methods of relieving

Associated or accompanying symptoms as malaise, debility, nausea, vomiting, visual disturbances, fainting (fall, injury), drowsiness or sleeping after a headache are significant.

The commoner conditions causing vertex or frontal headache are fever, indigestion, anemia, glaucoma, constipation, eyestrain, sinusitis, or pituitary tumor, acute general infections with fever, without or with mild encephalitis especially virus pneumonia, mumps, vaccinia, smallpox, scarlet fever, poliomyelitis, and trichinosis.

Local processes in the head outside the cranial cavity. Eye disturbances: refractive errors, eyestrain, inflammations, glaucoma; *sinusitis*, edema, or vacuum of ethmoid, sphenoid or frontals; otitis media, mastoiditis, eustachian obstruction, contusions, indurations of fibrositis.

Maxillary sinusitis, **otitis media, mastoiditis, unilateral headaches** may be due to *migraine, trigeminal neuralgia,* inflamed muscular attachment to skull, fatigue, unilateral eye strain, drug idiosyncrasies, allergies or histaminic cephalalgia, temporal arteritis, lateral sinus thrombosis.

Occipital headaches are most common in essential hypertension or nephritis and uremia. Organic brain diseases, cerebellar tumor, abscess, encephalitis, meningitis are to be considered if all others consequently are ruled out. Subarachnoid hemorrhage, cerebral hemorrhage or cerebral thrombosis, or arteriosclerosis may cause occipital headaches.

Increased intracranial pressure with edema of tumor or of malignant hypertension, chronic nephritis, congestive heart failure or aortic regurgitation produce frontal headache.

Variable headache, syphilitic or tuberculous or meningo or virus encephalitis, multiple abscesses or tumors, trauma, fracture of skull, cerebral concussion, contusion or laceration of the brain, or sunstroke, miliary infarctions from S B E and psychoneurosis may produce a variable headache.

Decreased intracranial pressure, lumbar puncture leakage, shock, hemorrhage, or hypotension cause headache.

Poisoning toxic anoxia excess histamine alcohol carbon monoxide hydrogen sulfide lead amyl nitrite ether or chloroform may produce cephalalgia

Vertigo (Dizziness)

Dizziness may be indefinite, rotary, or with tumbling sensation, subjective or objective in nature Note length of attack progress period of partial or complete freedom associated visual disturbances and symptoms as tinnitus roaring deafness headache mental confusion anxiety irritability or depression nervous debility or ataxia

Some common conditions often producing vertigo are hypertension cerebral or cerebellar arteriosclerosis angiospasm hemorrhage thrombosis tumor of the eighth nerve cerebellum or fourth ventricle vestibular hemorrhage or ischemia (Meniere s disease) cerebral anemia cardiac syncope (Adams Stokes disease) aortic regurgitation hypotension eustachian tube closure or simply a gastrointestinal upset

Exophthalmos

Exophthalmos bilaterally is due most commonly to *hyperthyroidism* that is Graves disease or syndrome nervousness with a thyroid tumor lymphadenopathy tachycardia tremor and lymphocytosis It is less often a part of hypertension chronic nephritis or a familial characteristic It may result from cavernous sinus thrombosis tumor of the pituitary gland aneurysm of the basilar artery or sarcoma of the sphenoid bone

*Thyrotoxic exophthalmos** occurs in young adults 4 to 1 in women It is accompanied by other thyrotoxic symptoms and especially a high B M R Fyelids show *no edema* or swelling unless ulceration develops which is rare and *eyeballs* can be pushed back in orbit It is relieved by thyroidectomy

Thyrotropic exophthalmos occurs at middle age 4 to 1 in men It is accompanied by no thyrotoxic symptoms and pre

* Mulvany J H Ophthalmos June July August, 1944

Associated or accompanying symptoms as malaise, debility nausea, vomiting, visual disturbances, fainting (fall, injury), drowsiness or sleeping after a headache are significant

The **commoner conditions causing vertex or frontal headache** are fever, indigestion, anemia, glaucoma, constipation eyestrain sinusitis, or pituitary tumor, acute general infections with fever, without or with mild encephalitis, especially virus pneumonia, mumps, vaccinia smallpox, scarlet fever, poliomyelitis, and trichinosis

Local processes in the head outside the cranial cavity Eye disturbances refractive errors eyestrain, inflammations glaucoma, *sinusitis*, edema, or vacuum of ethmoid sphenoid, or frontals, otitis media, mastoiditis, eustachian obstruction contusions, indurations of fibrositis

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Decreased intracranial pressure lumbar puncture leakage, shock hemorrhage or hypotension cause headache

chicken pox smallpox, erysipelas and infectious or toxic erythema and typhus fever dengue meningococcemia acute gout

Acute Infectious Diseases With More Continuous Fever and More General Symptoms—Pneumonia bronchopneumonia influenza tuberculosis typhoid fever sepsis endocarditis appendicitis pyelitis cholecystitis, cholangitis tonsillitis rheumatic fever acute infectious arthritis meningitis glandular fever and acute leucemia

Recurrent Fever With Chills—Pyelitis sepsis malaria typhoid fever tuberculosis typhus fever tularemia undulant fever Hodgkin s disease

Fever calls for careful study and consideration of each of the common causes of such sepsis Acute *malaria* produces teeth chattering chills and fever at regular intervals

Acute pyelitis is ushered in with shaking chills, genuine rigors followed by a spiking high fever that is intermittent Most patients suffer severe pain in the flank abdomen or bladder frequency and burning pyuria and occasionally collapse and delirium A septicemia of coliform organisms is usually present and occasionally there is a demonstrable prostatitis coliform vesiculitis epididymitis or urethritis or a septic uterus after abortion Any may be the source of a septicemia due to streptococci staphylococci or gonococci Pus is usually found in the urine

Pneumonia due to pneumococci streptococci staphylococci or Friedlander s bacilli is frequently accompanied by septicemia Pneumonia was a killer before the day of the sulfonamides penicillin and streptomycin and the staphylococcic and bacillary F types are still to be feared

The general systemic septicemic manifestations may be overwhelming and the lobar pulmonary consolidation may give very few signs and be late in appearance In the nephrotic syndrome a purulent pneumococcic *peritonitis* gives most signs with abdominal distress Occasionally there is a purulent pneumococcic *meningitis* with headache and stiffness

sents a low B M R Eyelids show *edema*, conjunctival chemosis, and venous congestion *Eyeballs* cannot be pushed back into orbits by manual pressure Patients get worse after thyroidectomy

Pulsating exophthalmos develops in arteriovenous aneurysm of the internal carotid artery, circle of Willis and the cavernous sinus or in aneurysms of the carotid or of ophthalmic artery or hemangioma of the orbit, varicose orbital veins vascularized sarcoma or solid tumors on arteries meningocele and meningoencephalocele The effect of compression of the carotid artery should be observed

Unilateral nonpulsating exophthalmos is the result of hemorrhage, emphysema or tumor of the orbit effusion into the capsule of Tenon or trochlear bursa Inflammation, acute pyogenic or chronic pyogenic infection from sinusitis cysts of lacrimal gland, dermoid tumor lymphoblastoma or leukemia tuberculosis or syphilis

Fever

Note height subfebrile slightly moderately decidedly or highly febrile or hyperpyrexia (Was a thermometer used?) Character continued, remittent intermittent or interrupted fluctuating, septic (time of rise) relapsing Stage invasion fastigium defervescence lysis crisis Time diurnal nocturnal Frequency daily every other day third or fourth day regularity type and extent of rise

Sweats Note time extent profuse drenching and effects

Chills Differentiate true rigors and simple chilliness Note time, onset regularity frequency effects and duration

Malaise Note weakness (general or local) onset, progress and degree with exhaustion prostration delirium

The More Common Conditions to Be Considered When Fever Is the Outstanding Symptom —*Acute Infectious Diseases With More or Less Typical Cutaneous Manifestations* — The exanthemas as scarlatina measles German measles

chicken pox smallpox erysipelas and infectious or toxic erythema and typhus fever dengue meningococcemia acute gout

Acute Infectious Diseases With More Continuous Fever and More General Symptoms—Pneumonia bronchopneumonia, influenza tuberculosis typhoid fever, sepsis endocarditis appendicitis pyelitis cholecystitis cholangitis, tonsillitis rheumatic fever acute infectious arthritis meningitis glandular fever and acute leucemia

Recurrent Fever With Chills—Pyelitis sepsis malaria, typhoid fever tuberculosis typhus fever tularemia undulant fever Hodgkin s disease

Fever calls for careful study and consideration of each of the common causes of such sepsis Acute *malaria* produces teeth chattering chills and fever at regular intervals

Acute pyelitis is ushered in with shaking chills genuine rigors followed by a "spiking high fever that is intermittent Most patients suffer severe pain in the flank abdomen or bladder frequency and burning pyuria and occasionally collapse and delirium A septicemia of coliform organisms is usually present and occasionally there is a demonstrable prostatitis coliform vesiculitis epididymitis or urethritis or a septic uterus after abortion Any may be the source of a septicemia due to streptococci staphylococci or gonococci Pus is usually found in the urine

Pneumonia due to pneumococci streptococci staphylococci or Friedlander s bacilli is frequently accompanied by septicemia Pneumonia was a killer before the day of the sulfonamides penicillin and streptomycin and the staphylococcic and bacillary k types are still to be feared

The general systemic septicemic manifestations may be overwhelming and the lobar pulmonary consolidation may give very few signs and be late in appearance In the nephrotic syndrome a purulent pneumococcic *peritonitis* gives most signs with abdominal distress Occasionally there is a purulent pneumococcic *meningitis* with headache and stiffness

Empyema and *pulmonary abscess* may develop and give rise to signs in the pleura or in the lung

Miliary tuberculosis is the result of a widespread hematogenous seeding or dissemination of tubercle bacilli that have gotten into a vein from a caseating necrotic node penetrating the vein wall The tubercle bacilli may be filtered out and a primarily *pulmonary* dissemination develops and is revealed only by radiogram The *meninges* may be most heavily seeded and the headache and stiff neck may dominate the picture The *generalized* form may result from heavy deposition of organisms in all organs and tissues

Bacterial endocarditis with vegetative valvulitis by various pyogenic organisms results in valvular ulceration embolism, and infarction The valvulitis may be primary or secondary due to *Streptococcus viridans* engrafted upon damaged rheumatic valves Fever chills anemia petechiae emboli and diastolic murmurs are characteristic

Septic embolism to kidney spleen, brain or to the skin and finger tips, as well as to the skin with petechiae flamelike hemorrhages and clubbed fingers hematuria albuminuria, positive blood cultures changing heart sounds and diastolic murmurs give rise to a protean picture

Meningococcemia may produce spotted fever in the skin and endocarditis before exhibiting meningeal signs In virulent infections adrenal apoplexy may intervene and dominate the picture An accompanying blood pressure collapse suggests Waterhouse Friderichsen s syndrome

Positive blood cultures are of great diagnostic value

Hyperpyrexia of *obscure origin* may be due to (1) *osteomyelitis,* (2) *liver abscess* (3) *typhoid fever,* (4) *subdiaphragmatic abscess* (5) *pylephlebitis*

Osteomyelitis is usually due to a staphylococcic septicemia but may be the result of a generalized granuloma or a coccidioido actinomycosis or tuberculosis Local abscesses develop in the bones that have been traumatized

After a slight injury pain swelling and redness of the part are followed by high fever and chills prostration delirium leucocytosis and a positive blood culture for staphylococci

Liver abscess may present a picture of fever and symptoms of a general toxic state headache nausea vomiting distention biliousness general aching prostration delirium with slight pallor icterus or sallowness wasting leucocytosis anemia petechiae and sometimes enlargement of the liver and elevation of the diaphragm on the right The abscess may be single or multiple following appendiceal suppuration or colitis of streptococci or amebic origin Slight icterus to jaundice develops as a rule

If the right leaf of the diaphragm is elevated or the liver extends below the costal margin paracentesis is justifiable peritoneoscopy may be an aid as a guide If no abscess is located thorotrast visualization of the architecture is in order or surgical exploration *Empyema* of the gall bladder may be seen through the peritoneoscope

Pylephlebitis is a fortunately rare almost always fatal thrombophlebitis of the hepatic and portal veins causing painful swelling of the liver and rather acute enlargement of the spleen

Typhoid fever is a septicemia with location in Peyer s patches Occasionally chills and a septic type of fever dominate the picture but usually there is malaise with a day by day steplike rise of remittent fever during two to three weeks of invasion to the fastigium The pulse is relatively slow that is it does not rise 8 beats for every degree of fever as it usually does The blood culture in bile broth is usually positive during the invasion Rose spots appear on the abdomen and the spleen becomes palpable as the torpor increases during the fastigium of sustained high fever and the Widal titer of agglutinins increase even as the defervescence develops

Biopsy of a lymph gland and bone marrow and liver are in order in any cryptogenic pyrexia in which clinical study has

been equivocal for Hodgkin's disease or lympho or myelo blastoma, carcinomas, any of which may give rise to fever

A rapid screening by means of agglutination tests with *E typhi,* O and H strain B Paratyphosus A and B (Widal) *B tularense, B abortus (suis), B dysenteriae (Shiga), B proteus,* OX 19 (Weil Felix) is carried out routinely

Serologic tests for syphilis and antisheep red blood cell test (Paul Bunnell) for heterophilic antibodies of infectious mon onucleosis and *intradermal skin* tests with tuberculin and coccidioidomycosin and brucellergin are done in all obscure cases with fever

Pain

Pain in the thorax may be acute or chronic Low grade in fections may involve the *skin* subcutaneous fat, fibrous tissue or muscle with acute exacerbations of herpes zoster, *panniculitis or fibromyositis,* or *intercostal neuralgia* or pleurodynia in the chest wall

Nerve root irritation by pressure from arthritic changes or compression or destruction of the transverse processes or bodies of the vertebrae cause sharp lancinating pains tabes dorsalis gives rise to similar pain and the characteristic girdle sensation and absent pupil to light and deep reflexes

Pleurisy is the tearing or rending pain that is seriously aggravated by respirations It is the result of roughening of the pleura by infection with tubercle bacilli, pneumococcus or any other organism or by neoplasm infarction, or trauma

Deep *pulmonary* or *lung pain* may be felt as an aching heaviness in neoplasm abscess infarction cyst or infiltration until the lesion reaches the pleural surface Involvement of the pleura, periosteum, and intercostal nerves with acute pleuritis causes pain to develop Accompanying disproportion ately grave dyspnea and persistent hacking dry cough with occasionally blood streaked mucus are characteristic symp toms

Pericardial pain is severe and cutting especially when the diaphragmatic zone just where the pleura is reflected is in

volved Effusion in the serous sacs may relieve the pain or change it to heaviness or a dull dragging sensation

Aneurysm is usually asymptomatic until by pressure it begins to erode the chest wall or spine when a deep constant boring pain is felt and sharpness develops as nerves are compressed

Heartaches with dull heaviness in the precordium occur in chronic hypertension aortitis and chronic valvular disease or fibrous synechia of the pericardium

Acute cardiac pain as the momentary paroxysms of angina pectoris are noted in coronary artery disease with temporary insufficiency of coronary circulation

Coronary thrombosis or occlusion with or without myocardial infarction produces similar but more protracted burning pain substernal oppression and constriction Radiation takes place to the shoulders usually the left and down the ulnar side of the arm to the elbow wrist or little finger It is usually accompanied by dyspnea shock pallor cold sweat nausea and vomiting diarrhea with electrocardiographic changes fever leucocytosis and increased erythrocytes and sedimentation rate

Dissecting aneurysm of the *aortic arch* may give similar but usually more dreadful agony and shock even to unconsciousness Pain radiation is down the back into the flanks or to the legs or the arms accompanied by restlessness and impending collapse Electrocardiographic changes are usually absent Rapid or slow advancing of the dissection with various regions may be followed Mesenteric renal or iliac arteries may be involved and the lumens occluded

Chronic chest pain may develop in any of the conditions causing acute pain acute exacerbations then may occur with persistent dull heavy aching or soreness between acute flare ups

Cough

Cough may be acute or chronic matinal seasonal tight loose spasmodic free frequent constant intermittent par

oxysmal, with hoarseness brassiness, or associated symptoms Establish if possible precipitating or aggravating factors

Expectoration Note amount, character, source of sputum, nasopharynx or bronchi, admixture or pus, color and odor, blood mixed or streaked (hemoptysis), froth or rare contaminants

The common conditions with cough as a prominent symptom are irritation of a branch of the vagus nerve in the pharynx, larynx, trachea, bronchi, lung and mediastinum Local irritants, dust, smoke, aspirated particles, food, foreign bodies, excessive secretion, inflammation, pressure, and simple debility with decreased action of cilia are the chief causes Often cough is the result of pulmonary edema

Cough without expectoration, that is, a dry cough, is usually purely reflex *from something that the cough is powerless to* remove A brassy, barking, rough cough is often due to aneurysm or a mediastinal tumor mass Paralysis of the vocal cords produces a more or less characteristic cough, as do also whooping cough and tuberculous laryngitis

Cough with expectoration of tenacious sputum occurs in pneumonia (in which it is also rusty) bronchopneumonia, and subacute bronchitis Pulmonary edema and chronic bronchitis produce frothy mucopurulent sputum Phthisis gives rise to a blood clot or a streaked nummular sputum Mitral stenosis often produces rusty or a *blood streaked sputum* Bronchiectasis lung abscess and gangrene produce a fetid sweetish layered, or purulent sputum which may show blood

Duration of the cough is *important for days*, acute diseases, or for months, chronic diseases Cough onset on getting up, bronchial, on going to bed laryngeal, during sleep, phthisis, on slipping down heart disease Alteration of the voice since onset of cough suggests laryngeal inflammation or tumor or paralysis of the vocal cords Associated vomiting in whooping cough or severe bronchial irritation, the patient may *cough until he vomits or vomiting may be*

reflex Cough occurs before the inauguration of dyspnea as in asthmatic bronchitis and at the end of a paroxysm in bronchial asthma

Dyspnea

The respiratory rhythm and rate and the type and mode of breathing as well as the position assumed by the patient and his type of chest and thoracic habitus should be noted *Difficulty in breathing* may be due most often to congestion of the pulmonary veins and decrease of the vital capacity as a result of myocardial insufficiency or *heart failure* with delayed blood mass movement through the lung and *faulty oxygenation of the hemoglobin*

Pulmonary emphysema and *fibrosis* with resultant increase in the dead space interfere with blood flow to some extent but produce mostly inadequate air and gaseous *exchange in the alveolar walls*

Lesions in the mucosa submucosa or wall or compression of the walls of the air passage *from the outside* by tumor or aneurysm would interfere with the intake of air Pathologic changes in the alveolar walls and blood vessels or of the hemoglobin would interfere with the take up of oxygen

Obstruction in airways to free passage of air *through* the pharynx larynx trachea or lumen of a primary bronchus as a result of edema tumor bilateral cord paralysis foreign body exudate blood or carcinoma may cause *dyspnea*

Stridor is produced by obstruction in the major airways a high pitched shrill whining heard best often with the bare ear as the patient sucks air past the obstruction by forceful inspiration It is also heard in any gasping breathing and in uremic patients there is sometimes an audible *hissing* sound

Deep slow kussmaul air hunger type of breathing develops in diabetic acidosis

Cheyne Stokes rhythmic crescendo and decreasing breathing with *apneic periods* occurs in *chronic cardiovascular renal diseases* and is aggravated by narcotics

Biot s irregular breathing suggests *meningitis or encephalitis*

Cardiac dyspnea is of different forms and of varying prognostic significance It is most commonly definitely exertional at first, only after severe effort, then it is manifested with less and less exertion as the exercise tolerance decreases

Nocturnal paroxysms of dyspnea may occur before the shortness of breath on activity is noted Slipping down in bed from an orthopneic position or an exaggerated postapneic Cheyne Stokes, the hyperpnea stage may awaken the patient *from periodic and light sleep*

Orthopnea is inability to breathe comfortably in recumbent position on lying down More and more pillows two three four are added, then the cardiac must sit upright or lean *over a table to get his breath*

Progressive dyspnea increases gradually as the day and afternoon gets along, and especially in the evening, *may be relieved by narcotics as morphine but is best relieved by oxygen*

Cardiac asthma may develop suddenly in acute left ventricular failure from myocardial infarction or a fall in coronary artery pressure and circulation after an hour or more of sleep Cough with expectoration of mucus (frothy and often pink stained rarely frankly bloody unless there has been pulmonary embolism and infarction) may inaugurate a terrifying attack and sometimes end fatally Another precipitating factor may be *postprandial abdominal distention* increased by constipation and relieved by belching or the passage of flatus or urine

Edema

Note location, extent or degree character inflammatory or noninflammatory onset sudden or gradual effect of rest in bed, salt or fluid intake and output diets and drugs

Record of amount of *gain in weight and over what period* of time A weight chart is a most desirable record

Some Common Causes of Edema—Facial edema suggests nephritis or nephrosis Puffy eyelids may be due also to local

inflammation angioneurotic edema trichiniasis sphenoid sinusitis or cavernous sinus thrombosis local lymphangitis or cellulitis

Edema of dependent parts may be due to myocardial insufficiency of hypertensive arteriosclerotic or cardiac valvular disease origin obstruction of the iliac veins or inferior vena cava pressure of ascites tumors thrombosis or extensive thrombophlebitis

General anasarca Oligoproteinemia especially low serum albumin nephritis nephrosis nutritional edema severe anemia hookworm infestation tuberculosis carcinoma cachectic states or inanition beriberi or severe myxedema

Pain

Pain—Note exact location character dull aching constant shooting cramping tearing colicky knifelike paroxysmal rhythmical constricting throbbing point of maximum intensity distribution regional radiation time of onset duration precipitating causes position exertion eating emotion occupation meteorologic conditions aggravating factors alleviating methods as heat cold drugs rest motion food, or vomiting associated symptoms

The More Common Conditions to Be Considered When Pain Is the Presenting Symptom —

Lower chest pain may be due to distended stomach hiatus hernia subdiaphragmatic abscess liver and gall tract disturbances as well as pleurodynia intercostal neuralgia herpes zoster pleurisy and pneumonia pericarditis coronary spasm occlusion aortitis or aneurysm

Epigastric Discomfort—Aerophagia chronic gastritis chronic constipation pyloric spasmodic, or persistent obstruction cholecystitis appendicitis or chronic hepatic cirrhosis and chronic passive congestion of the liver in chronic myocardial insufficiency

Epigastric Pain (Acute)—Acute gastritis peptic gastric or duodenal ulcer tabetic crises pyloric spasm acute cholecystitis with or without cholelithiasis pancreatitis acute con

gestion, hepatitis, liver abscess Referred from above the diaphragm, angina pectoris coronary thrombosis, and, in rare instances, pericarditis

General Abdominal Pain—Constipation, mucous colitis, gastric neuroses, typhoid fever, appendicitis, peritonitis, intestinal obstruction, enteritis, lead poisoning, tabetic crises

Lower Abdominal and Flank Pain—Appendicitis, ovarian tumors tubal pregnancy salpingitis, dysmenorrhea, herpes zoster, diverticulitis, colitis or dysentery, ureteral stone renal stone or pyelitis perinephric or subdiaphragmatic abscess, renal tumors abdominal aneurysm

Extremity Pains—Rheumatic fever infectious arthritis gout, neuritis, bursitis, myositis periostitis (syphilitic), osteomyelitis, fractures sprains, or strains, tenosynovitis tumors, flatfoot metatarsalgia phlebitis, varicose veins, intermittent cramps or claudications obliterative endarteritis erythromelagia, Raynaud s disease Referred cardiac pain

Abdominal Pain

Stomach ache may be dull or sharp constant or intermittent, radiating epigastric discomfort or fullness, dyspepsia or indigestion associated symptoms appetite loss (anorexia), voracious appetite (bulimia), distention eructation of gas (belching or aerophagia) or of sour or bitter fluid nausea, vomiting, ordinary or projectile constipation or diarrhea Note relation of disturbance to meals to amount and character of food eaten to rest and sleep to hunger or night fast associated pulmonary or cardiac symptoms to abdominal flatulence thirst and to amount of water imbibed

Differential Diagnosis—Stomach ache is one of the most common and may be one of the most serious of complaints It may call for emergency treatment when it is the result of perforation or rupture of a viscus and yet again no cause may be demonstrable in the (1) belly wall (2) peritoneum (3) viscera, (4) spine, (5) nerve roots (6) diaphragm (7) pleura, (8) arteries (9) heart or (10) lungs Epigastric midline, umbilical ventral and direct or indirect and inguinal

herniation without or with strangulation may cause much pain and should be palpable and reducible with relief

Panniculitis and *fibrositis* of the belly wall are the result of low grade infection which may give rise to vague pain or soreness of variable degree This soreness comes and goes and is relieved by pressure heat and counterirritants and analgesics Some tissue atrophy and small tender nodules may be felt with the finger tips

Abdominal visceral pain may be one of several types due to (1) the cramping of an irritable or irritated obstructed bowel (2) ulceration of benign or malignant origin in the stomach duodenum or colon (3) colic of biliary or renal obstruction (4) inflammation (5) peritoneal infection or irritation (6) arterial thrombosis or embolism

Cramps are commonly complained of in gastroenteritis or colitis and in spasm of the abdominal muscles esophagus pylorus biliary tract appendix, colon flexures sigmoid rectum or uterus An obstruction or partial obstruction of any part of the gut or duct would give rise to the colicky pains from the increased peristaltic movement of the viscus wall or duct

An *ulcer* in the gullet stomach duodenum jejunum or colon causes burning *pain* of a severe nature recurrent and related to eating Hematemesis melena and tarry stools are common The pain is relieved by drinking milk or alkalies but is otherwise unchanged in nature or location It is periodic or seasonal and is usually the result of reflex spasm of the gut

A *malignant tumor* that has ulcerated does not give rise to as much pain as a benign lesion as a rule but gives rise to more vague discomfort anorexia flatulence weakness diarrhea tarry stools loss of strength and weight and pallor with cachexia The history of *trouble* is usually *a short* one

Colic is a paroxysmal pain of smooth muscle contraction against an obstruction or spasm and then relaxation Stone or masses of tissue detritus or blood clot in the biliary tract pancreatic duct or ureter give rise to acute excruciating sharp

gestion, hepatitis, liver abscess Referred from above the diaphragm, angina pectoris, coronary thrombosis, and, in rare instances, pericarditis

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reflex stimulation of the bowel Liquid stools may appear after peristalsis rumbling sensations have been felt in the abdomen and very little abnormality otherwise may be noted Later on the rectal mucosa may become irritated and burn and there may be some tenesmus

Acute diarrheas are frequently a part of *infectious disease processes* as *enterocolitis* with or without *gastritis* It is frequently a part of acute *food poisoning* or salmonella infection with nausea vomiting distention and abdominal tenderness localized in the colon

Diarrhea is a most serious symptom in infants especially during the summertime and may be accompanied by a dangerous loss of potassium Bacillary dysentery para B typhoid fever and amebic colitis must be considered in any patient with diarrhea and ruled out or in by laboratory studies stool cultures agglutination and complement fixation tests Virus X may be incriminated if no organisms are found

Heavy metal poisoning mercury arsenic, must not be lost sight of

Chronic diarrhea particularly that with recurrent exacerbations and no symptoms between attacks could be due to nervousness exophthalmic goiter achlorhydria nephritis uremia chronic *enterocolitis* diverticulitis bacillary amebic dysentery ulcerative colitis polyps and carcinoma of the descending colon or the rectum or duodeno- or jejunocolonic fistula Tuberculosis lymphopathia venerea syphilis general avitaminosis allergy or mucous colitis *may* be *the cause* Cholera typhoid fever peritonitis *cirrhosis of the liver* and cachectic states may present *diarrhea* as a symptom

Constipation

Acute constipation often dominates the clinical picture o an infectious disease and usually the first treatments ar directed at encouraging bowel movement enemas are usuall given

Acute intestinal obstruction should be suspected if the re turns from enemas consist of only slightly colored wate Laxatives and purgatives should not be given

pain This radiates characteristically to the right shoulder, to the central, left back, or into the genitals respectively, and may be followed by jaundice, hyperamylasemia or hematuria

Dysphagia

Pain and *difficulty* in swallowing may be functional or nervous in origin as *globus hystericus,* or failure of relaxation of the upper end of the esophagus or *cardiospasm* at the *lower end of the gullet There may be acute reflex spasm of* the pharyngoesophageal junction by acute pharyngitis, quinsy lingual ulcers, edema of the epiglottis, or laryngitis

Organic obstruction may be due to an intrinsic diverticulum tumor, ulcer, or stricture of the wall of the esophagus or the Plummer Vinson syndrome, which is *esophagitis* with *achlorhydria* and *anemia*

Extrinsic pressure from an *aneurysm, mediastinal tumor,* or *cyst partially* or completely obliterating the lumen of the gullet produces dysphagia and sometimes aphagia

Diarrhea

Disturbances in Defecation—Note regularity or irregularity, painfulness, frequency of, amount altered, character of stool, persistence or alternation of diarrhea and constipation

Diarrhea—Note acuteness or chronicity, pain, tenesmus type of stool with or without blood, pus, mucus, method of relieving associated symptoms sore tongue, changes in strength, weight, and color

Some common causal conditions may result from the eating of unripe fruit or spoiled food, mushroom poisoning, excessive catharsis, mercury or arsenic poisoning It is often associated with pernicious or idiopathic anemia, sprue or pellagra or with a partially obstructing and ulcerating large bowel lesion or stricture

Diarrhea, the common looseness of the bowel may be acute or chronic and may be variable in degree according to the number of liquid, watery bowel movements that occur each day It may be of *purely nervous* origin as the result of emotional upset, tenseness worry shock excitement, psychic

viscera or abdomen particularly the retroperitoneal kidney and colon Backache is most often the result of orthopedic conditions of the spine sacroiliac joint or back muscles The differential diagnosis must not be limited to chronic rheumatoid arthritis or osteoarthritis of the spine even though it is the most common cause of disability

Common Causes of Backache or Low Back Pain—General systemic infections as ' colds with fever upper respiratory infections smallpox influenza typhus typhoid dengue meningitis or tuberculosis suppurative pancreatitis perinephric or subdiaphragmatic abscess or other focal pyogenic process may cause backache

Spinal column—Muscle strain and fatigue due to neurasthenia bad posture articular relaxation of the sacroiliac region in pregnancy and coccygodynia cause low back pain

Kyphosis scoliosis herniation of intervertebral disc fracture of spinous or transverse processes or bad dislocation or osteoarthritis syphilis tuberculosis pyogenic osteomyelitis spondylolisthesis subluxation usually forward from a direct blow or fall or metastatic carcinoma in the pelvic girdle may be the source of trouble

Joints—Bursitis sacralization of the fifth lumbar sacroiliac slip or lumbosacral strain may cause backache

Spinal canal dural or cord lesions intervertebral nucleus pulposus radiculitis meningitis tumors or gummas may be demonstrable as the etiology of pain in the back

Pelvic disease as inflammatory pyosalpinx ectopic or normal pregnancy uterine fibroids erosion or laceration of the cervix ovarian tumors carcinoma of the bladder or prostate or vesiculitis or prostatitis splanchnoptosis posterior rectal lesions fissures cryptitis papillary hemorrhoids or prolapse are often responsible for backache

Renal and ureteral disease hydronephrosis hydroureter stone tumor or nephroptosis cause pain referred to the back

Nerve root lesions trauma cold dampness spinal arthritis and radiculitis sciatic neuritis alcoholism or pregnancy

Colicky and intermittent pain, vomiting, fairly consistent to the point of containing bile or fecal matter, are most serious symptoms

Dynamic ileus with visible peristalsis may develop with tenderness rigidity, and fever Strangulated hernia, volvulus, or intussusception should be looked for in the child who presents intractable vomiting

Paralytic ileus may develop after any serious abdominal operation Acute appendicitis septicemia, hydronephrosis, kidney stones, or renal infarction may be responsible for ileus Less acute disorders may be in the background such as chronic disease in the biliary tract or gastrointestinal tract or congestive heart failure, or any other condition likely to cause reflex disturbances may be at fault

The severity of constipation is determined by the number of stools per week, the methods of relieving and the results The types are so called *spastic* (small round ball or pencil shaped or scybalous stools accompanied by abdominal pain or colic sensation of fullness or pressure or a feeling of incomplete defecation) and *atonic* (large, dry, long, sausage or club shaped stools commonly with systemic symptoms)

Constipation may result from sedentary habits and neglect dietary indiscretions food poor in residue and water, poor *management careless use of cathartics laxatives or enemas* dyschezia, rectal colonic or intestinal stasis atonic or spastic gut neurasthenia hysteria hypochondriasis insanity, drug addiction, lead poisoning acute infectious diseases chronic pelvic inflammation appendicitis cholecystitis or peptic ulcer anemia, tabes dorsalis spasm of the sphincter ani, malignancy tuberculosis, or syphilis stricture and complete or partial obstruction of the rectum or anus

Pain in the Back

Pain in the back or backache is a most common symptom which may be due to a wide variety of causes which may be systemic and may, of course be of psychogenic origin But it does occur as a result of systemic organic disease of the

vesical tenesmus, and urina spastica There may occur more severe attacks of pain from conditions previously described such as obstructive lesions to the urinary outflow, extensive lesions of the bladder and reflex conditions and nerve root disturbances Malignant disease such as hypernephroma or prostatic or thyroid carcinoma may metastasize to the lumbar vertebrae and produce radicular pains

Differentiate pain from abnormal sensations in pelvic muscle bones joints and nerves or from the extremities Elicit details a outlined previously Determine presence of tenderness on pressure and local pain in area of discomfort

Dysuria

Urinary Disturbances—Burning, pain (dysuria), during or after micturition, or strangury, indicates cystitis Frequency at night (nocturia) suggests chronic prostatatism or *nephritis* by day (*diuria*), *trigonitis or urethritis* Alterations as increased volume (polyuria) suggests diabetes, decreased (oliguria) suggests myocardial insufficiency, suppression (anuria) suggests nephritis Retention may be due to stricture or prostatism overflow, dribbling or incontinence suggests neurogenic bladder Difficulty in starting urinary stream and forceless sudden stopping of stream urina spastica is often due to vesical calculus with colic into genitals Abnormalities in the urine, such as blood (hematuria) and pus in the urine (pyuria), suggest stone infarct or glomerulitis or pyelonephritis Commonly associated symptoms are *anorexia and drowsiness*

Some Common Causes of Urinary Disturbances—Frequency with increased volume, diuria and nocturia occurs in chronic nephritis and diabetes mellitus and insipidus Reduction in the urinary output may be due to excessive perspiration diarrhea or acute nephritis or nephrosis

Pain and burning during micturition (dysuria) are most commonly attributable to acute inflammation or irritation of the urethra (the result of a highly acid urine nonspecific urethritis, or gonorrhea), stricture of the urethra, the passage or the impaction of a calculus

Pain *following micturition* is usually due *to acute inflammation*, abscess or malignancy of the prostate, cystitis (acute or chronic nonspecific or tuberculous) ureteral or vesical calculus or tumor or ureteritis (descending *nonspecific or* tuberculous) Pain may be referred from rectal or anal lesions to the genitals

Pain unrelated to micturition aside from local lesions may be referred to the genitals in renal colic and occasionally in low pelvic lesions or even in acute appendicitis

Pain may develop during and following micturition without satisfaction, with urgency frequency constant discomfort

in the fat soluble vitamins Fresh milk, cream butter egg yolks mayonnaise ice cream cheese except Swiss cheese spreads fat meats especially pork bacon sausage and duck goose grease gravies, dressing, brains sweetbreads kidney liver fish roe oily fish as tuna salmon mackerel sardines and pompano are rich in vitamin A

Athiaminosis Deficiency of vitamin B_1 is associated with the usual disturbance of vision as ophthalmoplegia and pains in the legs in severe cases and tenderness of the muscles are usually present There may be extreme paresthesia neuritis and shortness of breath without orthopnea Upon study the heart may be found to be enlarged the venous pressure may be elevated and there may be edema in the dependent parts The circulation rate is usually increased Elevation of venous pressure and edema are found only in extreme cases of wet beriberi Edema may be about the ankles in the pretibial tissue and up to the knee joints Poor response to therapeutic digitalis is characteristic

Weakness may be due to the disproportionate loss of strength Characteristically the patient has great difficulty in rising from the squatting position due to the changes in the quadriceps muscle groups There develops often loss of vibratory sense in the toes and later in the malleoli and in the tibias tenderness of the calves and hyperesthesia of the feet and diminution and loss of the Achilles tendon and patellar reflexes The treatment with thiamine greatly augments the effect of rest on the heart failure and digitalis which has shown poor response to the usual therapy

Ariboflavinosis Deficiency of vitamin B_2 results in the picture of *pellagra* consisting of dermatitis diarrhea and dementia clouding of the consciousness sucking reflexes cogwheel rigidity and grasping The tongue becomes scarlet red then beefy red showing dental indentations The papillae of the tongue are at first congested and hypertrophied later becoming diffusely atrophied Later the filiform papillae become flattened As they atrophy or mat together *there* is multiple fissuring to give a geographic or cobblestone appearance An

Syndromes of Deficiencies in Vitamins

Symptoms are rarely a sufficient basis for diagnosis of avitaminosis Deficiency of *thiamine* commonly produces characteristic clinical or pathognomonic *symptoms*, which may however, occur but less conspicuously, in deficiency of other vitamins Apathy, lethargy, emotional irritability, hyper sensitivity to noise and painful or psychogenic stimuli, uncertainty of memory, weakness insomnia, headache, consciousness of heart action, palpitation, loss of dexterity, anorexia, nausea, distention epigastric pain, and constipation may be complained of Lack of *riboflavin* may cause burning of the eyes, eyestrain characteristically not relieved by glasses

Signs may be noted in patients with a general picture of nutritional deficiency which might be expected to present any or all these symptoms The usual *signs* of the avitaminoses are various general stigmas as dry brittle lusterless hair and loss of sleekness pallor blepharitis marginalis, pigmentation *about the mouth, tachycardia or bradycardia, low blood pres*sure loss of tone of muscle anemia, and oligoproteinemia

Vitamin A deficiency causes the characteristic symptom of night blindness and examination reveals xerosis of the conjunctiva thickening with loss of transparency more or less yellow pigmentation, especially along the horizontal meridian of the eyeball associated with small foamlike plaques called Bitot s spots and palpebral conjunctivitis with hypertrophy of the follicles, particularly of the lower eyelid Keratomalacia with thickening may go on to ulceration and necrosis of the cornea

In the early stages the *skin* shows papular eruptions of pilosebaceous follicles producing a graterlike feel which, when more fully developed presents the picture of keratosis pilaris on the extensor surfaces of the arms and thighs and the flexor surfaces of the legs The skin becomes dry and scaly and crinkles and in extreme cases resembles alligator hide which is called xerosis or asteatosis In such cases the diet history should be carefully obtained as to the intake of foods rich

Application of the pressure cuff or tourniquet may result in petechial hemorrhages of the skin in severe acute and sub acute deficiency cases and increased capillary fragility

Rickets The indications of deficiency of *vitamin D* are bulging of the *forehead cranial fossas which is rarely seen in* early infancy Defects of the teeth are also a late manifestation Most of the signs usually become evident only after the pathologic processes are no longer active or susceptible to treatment Malformation of the chest funnel breast enlargement of the costochondral junctions beading rachitic rosary retraction of Harrison s groove bowed legs and enlargement of the wrists elbows knees and ankles are all characteristic of skeletal deformities of old rickets

Avitaminosis K The tendency to bleeding suggests *vitamin K* deficiency In bleeding from minor wounds and into joints hemophilia must be ruled out Lengthening of the prothrombin activity time occurs in patients with disease of the liver with poor excretion of bile and in those with disease of the intestine such as sprue It develops spontaneously in newborn infants or after Dicumarol has been administered or large doses of salicylate have been given for rheumatic fever*

Combination pictures are common in many nutritional cases because avitaminoses are usually multiple in nature There are definite deficiency states as a decrease in pyridoxine I vitamin E folic acid or vitamin B_{12} or pantothenic acid biotin and inositol choline and methionine in which th clinical pictures are not yet clearly delineated

There are no absolute pathognomonic signs but there usually a combination of signs and evidence of multiple nutritional deficiency This is particularly so in conditions whic are known to deplete the store of these essential factors T high metabolic demands in pregnancy hyperthyroidism i fection and debilitating illness may lead to deficiency on diet which is otherwise adequate

cent's infection of the tongue and fauces, ulceration, and pseudomembrane develop secondarily

Dementia may develop early but usually is noted late in the disease

Dermatitis consists of erythema and rough scaling with ulceration and bullae formation, which later affect the skin of the hands, wrists, neck, face, and areas exposed to light

Diarrhea that is watery and profuse usually appears late in the disease Achlorhydria may be present

Ariboflavinosis Deficiency of vitamin B_6 characteristically shows soreness of the mouth and lips angular stomatitis erythema, and fissures with or without white moist maceration (perleche) and scars of healed lesions, cheilosis, swelling and blotting out of normal wrinkles of the lips by irregular crinkling, reddening thinning, scaling, and chapping of the epithelium and the magenta tongue a purplish red discoloration with swelling and flattening of the filiform papillae The eye signs consist of congestion of the limbic plexus visible with a small hand lens or +20 ophthalmoscope lens The vascularization by capillaries invading the cornea arising from the limbic plexus requires a slit lamp or biomicroscope for visualization

Scurvy stigmas suggesting deficiency of vitamin C (ascorbic acid) are those of capillary fragility The tendency to bruise easily with spontaneous ecchymosis of the skin or idiopathic hemorrhage into the joints and slowness of healing of wounds are the common findings

The gums show characteristic swelling, inflammation, tenderness, and bleeding on pressure, later there are increased thickening and increased firmness of the gum tissue, with retraction and exposure next to the teeth and in severe cases recession of the interdental papillae Retraction of the gums leaves pockets between the gum and teeth to become secondarily infected with resulting pyorrhea and later on, loosening and falling out of the teeth

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